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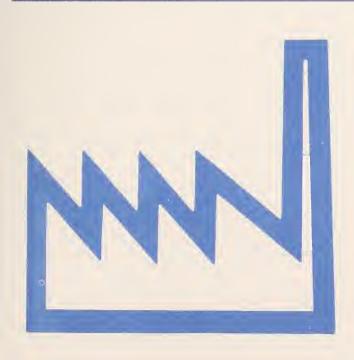
1987 Census of Manufactures

MC87-I-20F

INDUSTRY SERIES

Sugar and Confectionery Products

Industries 2061, 2062, 2063, 2064, 2066, 2067, and 2068



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If you have any questions concerning the statistics in this report, call (301) 763-2510.

1987

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INTRODUCTION

PURPOSE AND USES OF THE ECONOMIC CENSUSES

The economic censuses are the major source of facts about the structure and functioning of the Nation's economy. They provide essential information for government, business, industry, and the general public.

Economic censuses furnish an important part of the framework for such composite measures as the gross national product, input-output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions.

Policy-making agencies of the Federal Government use the data, especially in monitoring economic activity and providing assistance to business.

State and local governments use the data to assess business activities and tax bases within their jurisdictions and to develop programs to attract business.

Trade associations study trends in their own and competing industries, and keep their members informed of market changes.

Individual businesses use the data to locate potential markets and to analyze their own production and sales performance relative to industry or area averages.

AUTHORITY AND SCOPE

Title 13 of the United States Code (sections 131, 191, and 224) directs the Census Bureau to take the economic censuses every 5 years, covering years ending in 2 and 7. The 1987 Economic Censuses consist of the

Census of Retail Trade

Census of Wholesale Trade

Census of Service Industries

Census of Transportation

Census of Manufactures

Census of Mineral Industries

Census of Construction Industries

Special programs also cover enterprise statistics and minority-owned and women-owned businesses. (The 1987 Census of Agriculture and 1987 Census of Governments are conducted separately.) The next economic censuses are scheduled to be taken in 1993 covering the year 1992.

AVAILABILITY OF THE DATA

The results of each of the economic censuses are available in printed reports, for sale by the U.S. Government Printing Office, and on microfiche, computer tape, compact discs with read-only memory, and flexible diskettes, for sale by the Census Bureau. Order forms for all types of products are available on request from Customer Services, Census Bureau, Washington, DC 20233. A more complete description of publications being issued from this census is on the inside back cover of this document.

Census facts are also widely disseminated by trade associations, business journals, and newspapers. Volumes containing census statistics are available in most major public and college libraries. Finally, State Data Centers in every State and Business and Industry Data Centers in many States also supply economic census statistics.

WHAT'S NEW IN 1987

Several changes have taken place for the 1987 censuses. Data will be reported on the basis of the newly revised Standard Industrial Classification (SIC) system with selected reports including "bridge tables," linking the old and new classification systems. A new set of metropolitan areas has been adopted, and more detailed information will be available for businesses with no paid employees. For additional information on these changes, review the subsequent text.

HISTORICAL INFORMATION

The economic censuses have been taken together as an integrated program at 5-year intervals since 1967, and before that for 1963, 1958, and 1954. Prior to that time, the individual censuses were taken separately at varying inter-

The economic censuses trace their beginnings to the 1810 Decennial Census, when questions on manufacturing were included with those for population. Coverage of economic activities was expanded for 1840 and subsequent censuses to include mining and some commercial activities. In 1902, Congress established a permanent Census Bureau and directed that a census of manufactures be taken every 5 years. The 1905 manufactures census was the first time a census was taken apart from the regular every-10-year population census.

The first census of business was taken in 1930, covering 1929. Initially it covered retail and wholesale trade, and construction industries, but it was broadened in 1933 to include some of the service trades.

The 1954 economic censuses were the first to be fully integrated—providing comparable census data across economic sectors, using consistent time periods, concepts, definitions, classifications, and reporting units. These were the first censuses to be taken by mail, using lists of firms provided by the administrative records of other federal agencies. Since 1963, administrative records have also been used to provide basic statistics as well for very small firms, reducing or eliminating the need to send them census questionnaires. The Enterprise Statistics Program, which publishes combined data from the economic censuses, was made possible with the implementation of the integrated census program in 1954.

The range of industries covered in the economic censuses has continued to expand. The Census of Construction Industries began on a regular basis in 1967, and the scope of service industries was broadened in 1967, 1977, and 1987. The Census of Transportation began in 1963 as a set of surveys covering travel, transportation of commodities, and trucks. New for 1987 are publications reporting on business establishments engaged in several transportation industries, paralleling the data on establishments in other sectors. This is part of a gradual expansion in coverage of industries previously subjected to government regulation. The Survey of Minority-Owned Business Enterprises was first conducted as a special project in 1969 and was incorporated into the economic censuses in 1972 along with the Survey of Women-Owned Businesses.

Economic censuses have also been taken in Puerto Rico since 1909, in the Virgin Islands and Guam since 1958, and in the Northern Mariana Islands since 1982.

Statistical reports from the 1982 and earlier censuses provide historical figures for the study of long-term time series, and are available in some large libraries. All of the census data published since 1967 are still available for sale on microfiche from the Census Bureau.

AVAILABILITY OF MORE FREQUENT ECONOMIC DATA

While the censuses provide complete enumerations every 5 years, there are many needs for more frequent data as well. The Census Bureau conducts a number of monthly, quarterly, and annual surveys, the results of which appear in publication series such as *Current Business Reports* (retail and wholesale trade and service industries), the *Annual Survey of Manufactures, Current Industrial Reports*, and the *Quarterly Financial Report*. Most of these surveys, while providing more frequent

observations, yield less kind-of-business and geographic detail than the censuses. The *County Business Patterns* program offers annual statistics on the number of establishments, employment, and payroll classified by industry within each county.

SOURCES FOR MORE INFORMATION

More information about the scope, coverage, classification system, data items, and publications for each of the economic censuses and related surveys is published in the *Guide to the 1987 Economic Censuses and Related Statistics*. More information on the methodology, procedures, and history of the censuses will be published in the *History of the 1987 Economic Censuses*. Contact Customer Services for information on availability.

CENSUS OF MANUFACTURES

General

This report, from the 1987 Census of Manufactures, is one of a series of 83 industry reports, each of which provides statistics for individual industries or groups of related industries. Additional separate reports will be issued for each State and the District of Columbia and for special subjects such as type of organization, distribution of sales by class of customer, concentration ratios and water use in manufacturing.

The industry reports include such statistics as number of establishments, employment, payroll, value added by manufacture, cost of materials consumed, capital expenditures, product shipments, etc.

State reports present similar statistics for each State and its important metropolitan statistical areas (MSA's), counties, and places. Selected statistical totals for "all manufacturing" have been shown in the State reports for MSA's with 250 employees or more and for counties and places with 450 employees or more.

The General Summary report will contain industry, product class, and geographic area statistics summarized in one report. The introduction to the General Summary discusses, at greater length, many of the subjects described in this introduction. For example, the General Summary text will discuss the relationship of value added by manufacture to National income by industry of origin, the changes in statistical concepts over the history of the censuses, and the valuation problems arising from intracompany transfers between manufacturing plants of a company and between manufacturing plants and sales offices and sales branches of a company.

Scope of Census and Definition of Manufacturing

The 1987 Census of Manufactures covers all establishments with one paid employee or more primarily engaged in manufacturing as defined in the 1987 Standard Industrial

Classification (SIC) Manual¹. This is the system of industrial classification developed by experts on classification in Government and private industry under the guidance of the Office of Information and Regulatory Affairs, Office of Management and Budget. This classification system is used by Government agencies as well as many organizations outside the Government.

The SIC Manual defines manufacturing as the mechanical or chemical transformation of substances or materials into new products. The assembly of component parts of products also is considered to be manufacturing if the resulting product is neither a structure nor other fixed improvement. These activities are usually carried on in plants, factories, or mills that characteristically use powerdriven machines and materials-handling equipment.

Manufacturing production is usually carried on for the wholesale market, for transfers to other plants of the same company, or to the order of industrial users rather than for direct sale to the household consumer. Some manufacturers in a few industries sell chiefly at retail to household consumers through the mail, through house-to-house routes, or through salespersons. Some activities of a service nature (enameling, engraving, etc.) are included in manufacturing when they are performed primarily for trade. They are considered nonmanufacturing when they are performed primarily to the order of the household consumer.

Relationship Between Annual Survey of Manufactures and Census of Manufactures

The Bureau of the Census conducts the annual survey of manufactures (ASM) in each of the 4 years between the censuses of manufactures. The ASM is a probability-based sample of approximately 56,000 establishments and collects the same industry statistics (employment, payroll, value of shipments, etc.) as the census of manufactures. In addition to collecting the information normally requested on the census form, the establishments in the ASM sample are requested to supply information on assets, capital expenditures, retirements, depreciation, rental payments, supplemental labor costs, costs of purchased services, and foreign content of materials consumed. Except for supplemental labor costs, the extra ASM items are collected only in census years.

Establishment Basis of Reporting

The census of manufactures is conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location. The ASM also is conducted on an establishment basis, but separate reports are filed for just those establishments selected in the sample. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1987, as in earlier years, a minimum size limit was set for inclusion of establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries. This report excludes information for separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company (see Auxiliaries).

Manufacturing Universe and Census Report **Forms**

The 1987 Census of Manufactures universe includes approximately 350,000 establishments. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures. The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in the publication are described below:

1. Small Single-Establishment Companies Not Sent a Report Form

In the 1987 Census of Manufactures, approximately 150,000 small single-establishment companies were excused from filing reports. Selection of these small establishments was done on an industry-by-industry basis and was based on annual payroll and total shipments data as well as on the industry classification codes contained in the administrative records of Federal agencies. The cutoffs were selected so that these administrative-records cases would account for no more than 3 percent of the value of shipments for all manufacturing. Generally, all single-establishment companies with less than five employees were excused, while all establishments with more than 20 employees were mailed forms.

Information on the physical location of the establishment, as well as information on payrolls, receipts (shipments), and industry classification, was obtained from the administrative records of other Federal agencies under special arrangements, which safeguarded their confidentiality. Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials

¹Standard Industrial Classification Manual: 1987: For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, Stock No. 041-001-00314-2.

were not distributed among specific products and materials for these establishments but were included in the product and material "not specified by kind" (n.s.k.) categories.

The industry classification codes included in the administrative-records files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded at the four-digit SIC level. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes these administrative-record cases were only given a two- or three-digit SIC group. For the 1987 Census of Manufactures, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the four-digit SIC level. Establishments that did not return the classification form were coded later to those four-digit SIC industries identified as "not elsewhere classified" (n.e.c.) within the given two- or three-digit industry groups.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassification has no significant effect on the statistics other than on the number of companies and establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments Sent a Report Form

The 200,000 establishments covered in the mail canvass were divided into three groups:

a. ASM sample establishments—This group consisted of approximately 56,000 establishments covering all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size (see appendix, Annual Survey of Manufactures).

In a census of manufactures year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll, and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply information on assets, capital expenditures, retirements, depreciation, rental payments, supplemental labor costs, and costs of purchased services. See appendix A, section 2, for an explanation of these items.

The census part of the report form is one of approximately 200 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of these many forms to canvass the 459 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries as well as secondary products and miscellaneous services that establishments classified in these industries were likely to be performing. Respondents were requested to identify the products, the value of each product, and, in a large number of cases, the quantity of the product shipped during the survey year. Space also was provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry, which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant material not identified on the form.

Finally, a wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

- b. Large and medium establishments (non-ASM)—Approximately 84,000 establishments were included in this group. A variable cutoff, based on administrative-records payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive one of the approximately 200 census of manufactures regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.
- c. Small single-establishment companies (non-ASM)—This group consisted of approximately 60,000 establishments. For those industries where application of the variable cutoff for administrative-records cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or "short" form was used. These establishments received one of the approximately 80 versions of the short form, which requested

summary product and material data and totals but no details on employment, payrolls, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics; the same data were collected on the short form as on the long form. However, detailed information on materials consumed was not collected on the short form; thus its use would increase the value of the n.s.k. categories.

Auxiliaries

In this industry report, the data on employment and payroll are limited to operating manufacturing establishments. The census report form filed for auxiliaries (ES-9200) requested a description of the activity of the establishments serviced. However, the manufacturing auxiliaries were coded only to the two-digit major group of the establishments they served; whereas, the operating establishments were coded to a four-digit manufacturing industry. Data for the approximately 10,000 separately operated auxiliaries are included in the geographic area series and in a report issued as part of the 1987 Enterprise Statistics Survey.

Auxiliaries are establishments whose employees are primarily engaged in performing supporting services for other establishments of the same company, rather than for the general public or for other business firms. They can be at different locations from the establishments served or at the same location as one of those establishments but not operating as an integral part thereof and serving two establishments or more. Where auxiliary operations are conducted at the same location as the manufacturing operation and operate as an integral part thereof, they usually are included in the report for the operating manufacturing establishment.

Included in the broad category of auxiliaries are administrative offices. Employees in administrative offices are concerned with the general management of multiestablishment companies, i.e., with the general supervision and control of two units or more, such as manufacturing plants, mines, sales branches, or stores. The functions of these employees may include (1) program planning, including sales research and coordination of purchasing, production, and distribution; (2) company purchasing, including general contracts and purchasing methods; (3) company financial policy and accounting; (4) general engineering, including design of product machinery and equipment, and direction of engineering effort conducted at the individual operation locations; (5) direction of company personnel matters; and (6) legal and patent matters.

Other types of auxiliaries serving the plants or central management of the company include purchasing offices, sales promotion offices, research and development organizations, etc.

Industry Classification of Establishments

Each of the establishments covered in the census was classified in 1 of 459 manufacturing industries in accordance with the industry definitions in the 1987 SIC Manual. The 1987 edition of this manual represents a major revision for manufacturing industries from the 1972 edition and its 1977 supplement. Appendix A of the 1987 Manual notes the revisions in the four-digit industry levels between 1972/77 and 1987.

An industry is generally defined as a group of establishments producing the same product or a closely related group of products. The product groupings from which industry classifications are derived are based on considerations such as similarity of manufacturing processes, types of materials used, types of customers, and the like. The resulting group of establishments must be significant in terms of number, value added by manufacture, value of shipments, and number of employees. The system operates in such a way that the definitions progressively become narrower with successive additions of numerical digits. For 1987, there are 20 major groups (two-digit SIC), 139 industry groups (three-digit SIC), and 459 industries (four-digit SIC). This represents an expansion of four-digit industries from 452 in 1972/77 and a reduction of threedigit groups from 143 in 1972/77. Product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. There are about 11,000 products identified by a seven-digit code. The seven-digit products are considered the primary products of the industry with the same four digits.

Accordingly, an establishment is usually classified in a particular industry on the basis of its major activity during a particular year, i.e., production of the products primary to that industry exceeds, in value, production of the products primary to any other single industry. In a few instances, however, the industry classification of an establishment is not only determined by the products it makes but also by the process employed in operations. Refining of nonferrous metals from ore or rolling and drawing of nonferrous metals (processes which involve heavy capitalization in specialized equipment) would be classified according to the process used during a census year. These establishments then would be "frozen" in that industry during the following ASM years.

In either a census or ASM year, establishments included in the ASM sample with certainty weight, other than those involved with heavily capitalized activities described above, are reclassified by industry only if the change in the primary activity from the prior year is significant or the change has occurred for 2 successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year (see appendix, Annual Survey of Manufactures).

However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The result of these rules covering the switching of plants from one industry classification to another is that, at the aggregate level, some industries comprise different mixes of establishments between survey years, and establishment data for such industry statistics as employment and payroll may be tabulated in different industries between survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the four-digit SIC level, should be viewed with caution. This is particularly true for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of companies and establishments.

While some establishments produce only the primary products of the industry in which they are classified, all establishments of an industry rarely specialize to this extent. The industry statistics (employment, inventories, value added by manufacture, total value of shipments including resales and miscellaneous receipts, etc.) shown in tables 1a through 5a, therefore, reflect not only the primary activities of the establishments in that industry but also their secondary activities. The product statistics in table 6a represent the output of all establishments whether or not they are classified in the same industry as the product. For this reason, in relating the industry statistics, especially the value of shipments to the product statistics, the composition of the industry's output shown in table 5b should be considered.

The extent to which industry and product statistics may be matched with each other is measured by two ratios which are computed from the figures shown in table 5b. The first of these ratios, called the primary product specialization ratio, measures the proportion of product shipments (both primary and secondary) of the establishments classified in the industry represented by the primary products of those establishments. The second ratio, called the coverage ratio, is the proportion of primary products shipped by the establishments classified in the industry to total shipments of such products by all manufacturing establishments.

However, establishments making products falling into the same industry category may use a variety of processes and materials to produce them. Also, the same industry classification (based on end products) may include both establishments that are highly integrated and those that put only the finishing touches on an already highly fabricated item. For example, the refrigeration equipment industry includes instances of almost complete integration (production of the compressor, condensing unit, electric motor, casting, stamping of the case, and final assembly) all

carried on at one plant. On the other hand, the condensing unit, the motor, and the case may be purchased and only assembled into the finished product.

In some instances, separate industry categories have been established for integrated and nonintegrated establishments. For other industries, the census provides separate statistics on the production of intermediate commodities made and used in the producing plant. For some industries characterized by many plants of the same company, separate figures on interplant transfers of products usually are shown.

Differences in the integration of production processes, types of operations, and alternatives in types of materials used should be considered when relating the industry statistics (employment, payrolls, value added, etc.) to the product and material data.

Value of Shipments for the Industry Compared With Value of Product Shipments

This report shows value of shipments data for industries and products. In tables 1a through 5a, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Value of product shipments shown in table 6a represents the total value of all products shipped that are classified as primary to an industry.

CENSUS DISCLOSURE RULES

In accordance with Federal law governing census reports, no data are published that would disclose the data for an individual establishment or company. However, the number of establishments classified in a specific industry is not considered a disclosure, so this information may be released even though other information is withheld.

The disclosure analysis for the industry statistics in tables 1a through 5a of this report is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line is suppressed. However, the suppressed data are included in higher-level totals. Additional disclosure analysis is performed for new capital expenditures that can be suppressed even though value of shipments data are publishable.

SPECIAL TABULATIONS

Special tabulations of data collected in the 1987 Census of Manufactures may be obtained on computer tape or in tabular form. The data will be in summary form and subject to the same rules prohibiting disclosure of confidential

information (including name, address, kind of business, or other data for individual business establishments or companies) as are the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief, Industry Division, Bureau of the Census, Washington, DC 20233.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used in this publication:

_	Represents zero.
(D)	Withheld to avoid disclosing data for individual
	companies; data are included in higher level
	totals.
(NA)	Not available.
(NC)	Not comparable.
(S)	Withheld because estimate did not meet pub-
	lication standards.
(X)	Not applicable.
(Z)	Less than half the unit shown.
do	Ditto.

n.e.	.c. Not	elsewhere classi	fied.
n.s.	k. Not	specified by kind	l.
pt.	Parl	t.	
r	Rev	rised.	
SIC	Star	ndard Industrial C	lassification.

Other abbreviations, such as lb, gal, yd, doz, bbl, and s tons, are used in the customary sense.

CONTACTS FOR DATA USERS

Subject Area	Contact	Phone
Census/ASM Durables Nondurables	Kenneth Hansen Michael Zampogna	(301) 763-7304 (301) 763-2510
Current Indus- trial Reports Durables Nondurables	Malcolm Bernhardt Thomas Flood	(301) 763-2518 (301) 763-5911
Import/Export Publications	Foreign Trade Division	(301) 763-5140
Industry Analysis and Forecasts	International Trade Administration	(202) 377-4356

Users' Guide for Locating Statistics in This Report by Table Number

For explanation of terms, see appendixes

			Four-digi	t industry s	statistics					duct class a oduct statis	
ltem	Histori- cal	Operating ratios	By geo- graphic area	Sum- mary and supple- mental	By employ- ment size	By industry and product class specialization	Materials con- sumed by kind	Industry- product analysis	Product ship- ments	Product class by geo- graphic area	Historical product class
Number of companies	1a			3a					*6a		
Number of establishments	1a		2	3a	4	5a					
Employment and payroll: Number of employees Payroll Supplemental labor costs Production workers Production- worker hours.	1a 1a 1a 1a	1b 1b 1b	2 2 2 2	3a 3a 3a 3a 3a	4 4 4	5a 5a 5a 5a					
Production- worker wages Shipments, cost of materials, and value added: Value of shipments (four-digit) Product class shipments	1a 1a	1b	2	3a 3a	4	5a 5a		5b			
(five-digits)	1a 1a	1b 1b	2 2	3a 3a 3a	4 4	5a 5a	7		6a 6a	6b	6c
Inventories: Total, end of year By stage of fabrication	1a			3a 3a	4						
Capital expenditures, assets, rental payments, and purchased services: New capital expenditures. Used plant and equipment expenditures. Gross assets. Depreciation. Retirements of buildings and machinery. Rental payments. Foreign content of materials consumed. Purchased services.	1a		2	3b 3b 3b 3b 3b 3b	4	5a					
Ratios: Specialization Coverage	1a 1a			3a 3a				5b 5b			

^{*}Number of companies with shipments of more than \$100 thousand.

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6a-2.	Industry-Product Analysis—Value of Shipments and Primary Product Shipments and Specialization and Coverage Ratios for the Industry: 1987 and Earlier Census Years Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982 Related Products From Current Industrial Reports Series—Value of Shipments by All Producers: 1987 and 1982 Selected Products Primary to More Than One Industry—Quantity and Value of Shipments by Industry: 1987 and 1982 Product Classes—Value of Shipments by All Producers for Specified States: 1987 and 1982 Historical Statistics for Product Classes—Value Shipped by All Producers: 1987 and Earlier Years	17 18 20 21 21 22
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	Explanation of Terms	

DESCRIPTION OF INDUSTRIES AND SUMMARY OF FINDINGS

This report shows 1987 Census of Manufactures statistics for establishments classified in each of the following industries:

SIC code and title

Daw Cono Sugar

2061

2068

fied in other industries.

2001	naw Carle Suyar
2062	Cane Sugar Refining
2063	Beet Sugar
2064	Candy and Other Confectionery Products
2066	Chocolate and Cocoa Products
2067	Chewing Gum

Salted and Roasted Nuts and Seeds

The industry statistics (employment, payroll, cost of materials, value of shipments, inventories, etc.) are reported for each establishment as a whole. Aggregates of such data for an industry reflect not only the primary activities of the establishments but also their activities in the manufacture of secondary products as well as their miscellaneous activities (contract work on materials owned by others, repair work, etc.). This fact should be taken into account when comparing industry statistics (tables 1 through 5a) with product statistics (table 6) showing shipments by all industries of the primary products of the specified industry. The extent of the "product mix" is indicated in table 5b, which shows the value of primary and secondary products shipped by establishments classified in the specified industry and the value of primary products of the industry shipped as secondary products by establishments classi-

Small single-establishment companies with up to 20 employees (cutoff varied by industry) were excluded from the mail portion of the census. For these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated), data on payrolls and receipts were obtained from administrative records of other Federal agencies. The remaining statistics were developed from industry averages.

Establishment data were tabulated based on industry definitions included in the 1987 Standard Industrial Classification (SIC) Manual¹. The 1987 edition represents a major revision for manufacturing industries from the 1972 edition and its 1977 supplement. In addition to the 1987 SIC revision, changes were made to the product class

(five-digit) and product code (seven-digit) categories. The product class and product code comparability between the 1987 and 1982 censuses is shown in the appendixes. These appendixes present, in tabular form, the linkage from 1987 to 1982.

All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

INDUSTRY 2061, RAW CANE SUGAR

This industry is made up of establishments primarily engaged in manufacturing raw sugar, syrup and molasses, and finished (granulated or clarified) cane sugar from sugarcane. Establishments primarily engaged in refining sugar from purchased raw cane sugar or sugar syrup are classified in industry 2062.

The 1987 definition of this industry is the same as that used in the 1972/7 Standard Industrial Classification (SIC) system. The SIC number and title also are the same.

In the 1987 Census of Manufactures, Industry 2061, Raw Cane Sugar, had employment of 6.2 thousand. The employment figure was 17 percent below the 7.5 thousand reported in 1982. Compared with 1986, employment decreased 3 percent. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses. The leading States in employment in 1987 were Louisiana, Hawaii, Florida, and Texas, accounting for 100 percent of the industry's employment. These same States were the leaders in 1982, when they also accounted for 100 percent of the industry's employment.

The total value of shipments for establishments classified in this industry was \$1.2 billion. The products primary to industry 2061, no matter in what industry they were produced, appear in table 6a and aggregate to \$1.2 billion.

The total cost of materials, services, and fuels and electric energy used by establishments classified in the raw cane sugar industry amounted to \$792.1 million. Data on specific materials consumed appear in table 7.

Single-establishment companies in this industry with up to 10 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 1 percent of total value of shipments.

¹Standard Industrial Classification Manual: 1987. For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, Stock No. 041-001-00314-2.

INDUSTRY 2062, CANE SUGAR REFINING

This industry is made up of establishments primarily engaged in refining purchased raw cane sugar and sugar syrup.

The 1987 definition of this industry is the same as that used in the 1972/7 Standard Industrial Classification (SIC) system. The SIC number and title also are the same.

In the 1987 Census of Manufactures, Industry 2062, Cane Sugar Refining, had employment of 5.5 thousand. The employment figure was 34 percent below the 8.3 thousand reported in 1982. Compared with 1986, employment remained the same. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses. The leading States in employment in 1987 were Louisiana, California, and New York. These same States were the leaders in 1982.

The total value of shipments for establishments classified in this industry was \$2.5 billion.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as resales and contract receipts. Industry 2062 shipped \$2.4 billion of cane sugar refining products considered primary to the industry, \$6.1 million of secondary products, and had \$42.3 million of miscellaneous receipts, resales, and contract work. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 99 percent (specialization ratio). In 1982, the specialization ratio also was 99 percent.

Establishments in this industry also accounted for 99 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). In 1982, the coverage ratio also was 99 percent. The products primary to industry 2062, no matter in what industry they were produced, appear in table 6a and aggregate to \$2.4 billion. For further explanation of specialization and coverage ratios, see table 5b and the appendixes.

The total cost of materials, services, and fuels and electric energy used by establishments classified in the cane sugar refining industry amounted to \$2.0 billion. Data on specific materials consumed appear in table 7.

Single-establishment companies in this industry with up to 5 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 1 percent of total value of shipments.

INDUSTRY 2063, BEET SUGAR

This industry is made up of establishments primarily engaged in manufacturing sugar from sugar beets. Establishments primarily engaged in the manufacture of raw cane sugar and cane sugar refining are classified in industries 2061 and 2062, respectively.

The 1987 definition of this industry is the same as that used in the 1972/7 Standard Industrial Classification (SIC) system. The SIC number and title also are the same.

In the 1987 Census of Manufactures, Industry 2063, Beet Sugar, had employment of 7.9 thousand. The employment figure was 23 percent below the 10.3 thousand reported in 1982. Compared with 1986, employment remained the same. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses. The leading States in employment in 1987 were California, Idaho, Minnesota, and Michigan. This represents a shift from 1982 when California, Minnesota, Idaho, and Colorado were the leading States.

The total value of shipments for establishments classified in this industry was \$1.8 billion.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as resales and contract receipts. Industry 2063 shipped \$1.8 billion of beet sugar products considered primary to the industry, and had \$19.4 million of miscellaneous receipts, resales, and contract work. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 100 percent (specialization ratio). In 1982, the specialization ratio also was 100 percent.

Establishments in this industry also accounted for 99 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). In 1982, the coverage ratio also was 99 percent. The products primary to industry 2063, no matter in what industry they were produced, appear in table 6a and aggregate to \$1.8 billion. For further explanation of specialization and coverage ratios, see table 5b and the appendixes.

The total cost of materials, services, and fuels and electric energy used by establishments classified in the beet sugar industry amounted to \$1.3 billion. Data on specific materials consumed appear in table 7.

Single-establishment companies in this industry with up to 5 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 1 percent of total value of shipments.

INDUSTRY 2064, CANDY AND OTHER CONFECTIONERY PRODUCTS

This industry is made up of establishments primarily engaged in manufacturing candy, including chocolate candy, other confections, and related products. Establishments primary engaged in manufacturing solid chocolate bars, from cacao beans are classified in industry 2066, those manufacturing chewing gum are classified in industry 2067, and those primarily engaged in roasting and salting nuts are classified in industry 2068. Establishments primarily engaged in manufacturing confectionery for direct sale on the premises to household consumers are classified in Retail Trade, industry 5441. Products of this industry also are collected in the Current Industrial Report(s) (CIR) MA-20D, Confectionery.

The 1987 definition of this industry has been revised from that used in the 1972 Standard Industrial Classification (SIC) manual. 1972 SIC-based industry 2065 was split into two separate new industries: Candy and Other Confectionery Products, (SIC 2064) and Salted and Roasted Nuts and Seeds, (SIC 2068). The effect of the revisions on the data is summarized in tables Ic-I and Ic-2. During the 1987 processing, each establishment was classified according to both the old and new SIC. Table Ic-I shows the distribution of the new industry among the old SIC classifications based on the 1972 definitions. Table Ic-2 shows distribution of the old SIC based industries among the new SIC classifications.

In the 1987 Census of Manufactures, Industry 2064, Candy and Other Confectionery Products, had employment of 45.8 thousand. The leading States in employment in 1987 were Illinois, Pennsylvania, California, and New York.

The total value of shipments for establishments classified in this industry was \$7.0 billion.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as resales and contract receipts. Industry 2064 shipped \$6.5 billion of candy and other confectionery products considered primary to the industry, \$256.4 million of secondary products, and had \$246.0 million of miscellaneous receipts, resales, and contract work. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 96 percent (specialization ratio).

Establishments in this industry also accounted for 94 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). The products primary to industry 2064, no matter in what industry they were produced, appear in table 6a and aggregate to \$6.9 billion. For further explanation of specialization and coverage ratios, see table 5b and the appendixes.

The total cost of materials, services, and fuels and electric energy used by establishments classified in the candy and other confectionery products industry amounted to \$3.2 billion. Data on specific materials consumed appear in table 7.

Single-establishment companies in this industry with up to 5 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 3 percent of total value of shipments.

INDUSTRY 2066, CHOCOLATE AND COCOA PRODUCTS

This industry is made up of establishments primarily engaged in shelling, roasting, and grinding cacao beans for the purpose of making chocolate liquor from which cocoa powder and cocoa butter are derived, and in the further manufacture of solid chocolate bars, chocolate coatings, and other chocolate and cocoa products. Also included is the manufacture of similar products, except candy, from purchased chocolate or cocoa. Establishments primarily engaged in manufacturing candy from purchased cocoa products are classified in industry 2064. Products of this industry also are collected in the Current Industrial Report (CIR) MA-20D, Confectionery.

The 1987 definition of this industry has been revised from that used in the 1972 Standard Industrial Classification (SIC) manual. However, the SIC number and title are unchanged. 1972 SIC-based industry 2066 and product class 20998 were combined to form the new 1987 industry. The effect of the revisions on the data is summarized in tables 1c-1 and 1c-2. During the 1987 processing, each establishment was classified according to both the old and new SIC. Table 1c-1 shows the distribution of the new industry among the old SIC classifications based on the 1972 definitions. Table 1c-2 shows distribution of the old SIC-based industries among the new SIC classifications.

In the 1987 Census of Manufactures, Industry 2066, Chocolate and Cocoa Products, had employment of 11.0 thousand. The leading States in employment in 1987 were Pennsylvania, California, New York, and Wisconsin, accounting for approximately 80 percent of the industry's employment.

The total value of shipments for establishments classified in this industry was \$3.2 billion.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as resales and contract receipts. Industry 2066 shipped \$2.9 billion of chocolate and cocoa products considered primary to the industry, \$222.1 million of secondary products, and had \$50.1 million of miscellaneous receipts, resales, and contract work. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 93 percent (specialization ratio).

Establishments in this industry also accounted for 91 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio).

The products primary to industry 2066, no matter in what industry they were produced, appear in table 6a and aggregate to \$3.2 billion. For further explanation of specialization and coverage ratios, see table 5b and the appendixes.

The total cost of materials, services, and fuels and electric energy used by establishments classified in the chocolate and cocoa products industry amounted to \$1.7 billion. Data on specific materials consumed appear in table 7.

Single-establishment companies in this industry with up to 10 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 3 percent of total value of shipments.

INDUSTRY 2067, CHEWING GUM

This industry is made up of establishments primarily engaged in manufacturing chewing gum or chewing gum base.

The 1987 definition of this industry is the same as that used in the 1972/7 Standard Industrial Classification (SIC) system. The SIC number and title also are the same.

In the 1987 Census of Manufactures, Industry 2067, Chewing Gum, had employment of 5.2 thousand. The employment figure was 4 percent below the 5.4 thousand reported in 1982. Compared with 1986, employment decreased 4 percent. The 1986 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses. The leading States in employment in 1987 were Illinois and Pennsylvania accounting for approximately 70 percent of the industry's employment. This represents a shift from 1982 when Illinois, Pennsylvania, and California accounted for approximately 75 percent of the industry's employment.

The total value of shipments for establishments classified in this industry was \$1.1 billion. The products primary to industry 2067, no matter in what industry they were produced, appear in table 6a and aggregate to \$868.7 million. For further explanation of specialization and coverage ratios, see table 5b and the appendixes.

The total cost of materials, services, and fuels and electric energy used by establishments classified in the chewing gum industry amounted to \$347.1 million. Data on specific materials consumed appear in table 7.

Single-establishment companies in this industry with up to 5 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 1 percent of total value of shipments.

INDUSTRY 2068, SALTED AND ROASTED NUTS AND SEEDS

This industry is made up of establishments primarily engaged in manufacturing salted, roasted, dried, cooked, or canned nuts, or in processing grains or seeds in a similar manner for snack purposes. Establishments primarily engaged in manufacturing confectionery-coated nuts are classified in industry 2064, and those manufacturing peanut butter are classified in industry 2099.

The 1987 definition of this industry has been revised from that used in the 1972 SIC Standard Industrial Classification (SIC) manual. 1972 SIC-based industry 2065 was split into two separate new industries: Candy and Other Confectionery Products, (SIC 2064) and Salted and Roasted Nuts and Seeds, (SIC 2068). The effect of the revisions on the data is summarized in tables Ic-1 and Ic-2. During the 1987 processing, each establishment was classified according to both the old and new SIC. Table Ic-I shows the distribution of the new industry among the old SIC classifications based on the 1972 definitions. Table Ic-2 shows distribution of the old SIC-based industries among the new SIC classifications.

In the 1987 Census of Manufactures, Industry 2068, Salted and Roasted Nuts and Seeds, had employment of 8.8 thousand. The leading States in employment in 1987 were California, Georgia, North Carolina, and Minnesota, accounting for approximately 60 percent of the industry's employment.

The total value of shipments for establishments classified in this industry was \$2.2 billion.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as resales and contract receipts. Industry 2068 shipped \$1.9 billion of salted and roasted nuts and seeds products considered primary to the industry, \$202.6 million of secondary products, and had \$38.0 million of miscellaneous receipts, resales, and contract work. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 91 percent (specialization ratio).

Establishments in this industry also accounted for 94 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio).

The products primary to industry 2068, no matter in what industry they were produced, appear in table 6a and aggregate to \$2.1 billion. For further explanation of specialization and coverage ratios, see table 5b and the appendixes.

The total cost of materials, services, and fuels and electric energy used by establishments classified in the salted and roasted nuts and seeds industry amounted to \$1.3 billion. Data on specific materials consumed appear in table 7.

Single-establishment companies in this industry with up to 10 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 1 percent of total value of shipments.

Table 1a-1. Historical Statistics for the Industry (1987 Basis): 1987 and Earlier Years

[Industries with only 1987 data are revised for 1987. Table 1a-2 contains historical data on the old SIC basis. See table 1c-1 for composition of the new industry on the old SIC basis. Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes!

	only 1987 data are revised for 1987. Table 1a-2 contains historical data on the old SIC basis. See table 1c-1 for composition of the new industry on the old Sies. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]														
		All establi	ishments ³	All emp	loyees	Pro	duction wor	kers				New End-of-		Rati	os
Year ¹	Com- panies ² (no.)	Total (no.)	With 20 employ- ees or more (no.)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)	Value added by manufac- ture ⁴ (million dollars)	Cost of materials ⁵ (million dollars)	Value of shipments (million dollars)	capital expend- itures ⁶ (million dollars)	year inven- tories ⁴ (million dollars)	Spe- ciali- zation ⁷ (per- cent)	Cover- age ⁸ (per- cent)
	INDUSTRY 2061, RAW CANE SUGAR													- 0	
1987 Census 1986 ASM 1985 ASM 1984 ASM 1983 ASM	32 (NA) (NA) (NA) (NA)	40 (NA) (NA) (NA) (NA)	40 (NA) (NA) (NA) (NA)	6.2 6.4 6.8 7.4 7.6	143.3 141.3 141.4 143.2 141.1	4.8 5.0 5.4 5.8 6.1	11.0 11.3 11.6 12.8 13.0	108.4 105.6 106.8 106.4 106.2	504.2 429.6 451.7 449.8 478.4	792.1 789.6 772.3 791.2 837.8	1 239.4 1 244.0 1 168.6 1 232.5 1 311.6	46.2 34.0 49.3 48.7 41.9	321.9 281.3 310.2 238.3 229.7	(D) (NA) (NA) (NA) (NA)	(D) (NA) (NA) (NA) (NA)
1982 Census 1981 ASM 1980 ASM 1979 ASM 1978 ASM	43 (NA) (NA) (NA) (NA)	51 (NA) (NA) (NA) (NA)	(NA) (NA) (NA) (NA) (NA)	7.5 7.8 6.9 7.0 7.2	133.8 137.6 111.6 102.1 95.1	5.8 6.4 5.6 5.7 5.6	13.1 14.5 12.9 12.9 12.3	100.5 108.0 88.9 83.0 69.4	297.7 515.0 771.9 274.0 297.9	755.8 873.9 789.7 491.3 430.2	1 113.9 1 344.5 1 486.3 842.8 698.9	89.6 95.5 983.3 39.4 42.6	237.9 313.3 233.9 95.8 134.8	(D) (NA) (NA) (NA) (NA)	99 (NA) (NA) (NA) (NA)
1977 Census 1976 ASM 1975 ASM 1974 ASM ¹⁰ 1973 ASM 1972 Census	(NA) (NA) (NA) (NA) (NA)	65 (NA) (NA) (NA) (NA)	55 (NA) (NA) (NA) (NA) 62	8.0 8.1 7.8 7.0 7.1 7.1	95.8 99.6 88.4 70.1 66.5 60.7	6.3 6.2 5.4 5.6 5.2	13.6 14.7 13.9 12.7 13.3 12.3	70.8 75.8 66.4 52.1 50.0 44.0	275.7 246.2 454.4 737.1 219.5 151.7	440.1 429.1 535.1 599.3 335.4 260.9	704.0 713.5 1 015.9 1 262.1 542.0 406.5	43.4 72.7 74.4 38.5 34.3 28.8	107.9 78.7 117.4 140.8 56.5 43.2	100 (NA) (NA) (NA) (NA)	99 (NA) (NA) (NA) (NA) 96
	INDUSTRY 2062, CANE SUGAR REFINING														
1987 Census 1986 ASM 1985 ASM 1984 ASM 1983 ASM	14 (NA) (NA) (NA) (NA)	21 (NA) (NA) (NA) (NA)	16 (NA) (NA) (NA) (NA)	5.5 5.5 5.8 7.4 7.6	177.4 179.3 175.8 198.1 195.1	4.2 4.1 4.3 5.6 5.8	9.0 9.2 9.4 11.6 11.8	130.4 132.9 132.8 146.0 141.4	445.4 551.2 583.5 536.4 631.3	2 002.8 2 063.8 2 029.4 2 538.3 2 512.6	2 460.2 2 604.9 2 616.4 3 081.0 3 145.1	32.7 34.9 41.0 69.5 51.9	309.9 307.9 273.6 319.8 359.1	99+ (NA) (NA) (NA) (NA)	99 (NA) (NA) (NA) (NA)
1982 Census 1981 ASM 1980 ASM 1979 ASM 1978 ASM	19 (NA) (NA) (NA) (NA)	30 (NA) (NA) (NA) (NA)	25 (NA) (NA) (NA) (NA)	8.3 9.4 9.8 9.8 10.3	197.2 223.0 210.0 189.7 183.9	6.2 6.9 7.2 7.1 7.4	12.8 14.6 15.1 14.8 15.7	139.5 156.6 149.0 132.9 127.2	622.4 567.6 802.6 601.0 520.7	2 424.9 3 170.6 3 355.8 2 102.0 1 745.3	3 040.3 3 773.0 4 110.5 2 715.0 2 291.5	69.2 40.1 40.5 36.4 31.5	363.0 350.4 469.2 242.8 250.8	99+ (NA) (NA) (NA) (NA)	99 (NA) (NA) (NA) (NA)
1977 Census 1976 ASM 1975 ASM 1974 ASM 1973 ASM 1972 Census	27 (NA) (NA) (NA) (NA)	40 (NA) (NA) (NA) (NA) 33	27 (NA) (NA) (NA) (NA) 28	10.2 10.3 10.5 10.9 10.6 10.9	168.9 158.2 144.4 143.1 121.8 119.5	7.2 7.3 7.3 7.8 7.8 8.2	15.4 15.3 15.1 17.5 16.9 18.1	116.4 107.5 96.0 98.6 83.8 83.8	526.2 550.7 479.5 878.7 415.9 383.9	1 755.1 2 057.6 2 878.0 3 775.2 1 515.3 1 363.9	2 260.0 2 596.0 3 474.9 4 477.9 1 913.3 1 742.7	53.4 37.9 40.1 22.2 19.5 23.6	345.1 292.5 238.6 533.8 240.5 203.2	99 (NA) (NA) (NA) (NA)	99+ (NA) (NA) (NA) (NA) 98
	INDUSTRY 2063, BEET SUGAR														
1987 Census 1986 ASM 1985 ASM 1984 ASM 1983 ASM	14 (NA) (NA) (NA) (NA)	42 (NA) (NA) (NA) (NA)	38 (NA) (NA) (NA) (NA)	7.9 7.9 7.9 8.2 7.8	190.1 186.2 180.6 168.4 155.1	6.6 6.5 6.6 7.0 6.6	14.4 14.6 14.7 14.7 14.3	151.0 145.4 142.8 134.7 124.6	613.2 665.3 524.3 659.6 530.9	1 277.0 1 145.6 1 203.3 1 232.1 1 087.1	1 831.5 1 757.7 1 788.8 1 835.1 1 584.7	42.5 88.3 85.3 62.5 27.9	630.7 608.8 458.5 504.5 448.2	100 (NA) (NA) (NA) (NA)	99 (NA) (NA) (NA) (NA)
1982 Census 1981 ASM 1980 ASM 1979 ASM 1978 ASM	14 (NA) (NA) (NA) (NA)	48 (NA) (NA) (NA) (NA)	(NA) (NA) (NA) (NA) (NA)	10.3 10.3 9.9 9.7 10.8	169.4 163.5 142.2 141.0 150.0	8.8 8.8 8.5 8.1 9.4	17.3 17.3 16.6 16.5 18.7	136.4 130.8 113.1 112.5 123.1	432.2 541.3 527.3 375.3 351.3	1 102.5 1 336.4 1 225.8 967.5 899.3	1 515.8 1 872.7 1 802.3 1 347.8 1 265.3	32.8 39.8 61.2 56.9 53.6	480.5 399.5 418.2 426.1 470.8	100 (NA) (NA) (NA) (NA)	99 (NA) (NA) (NA) (NA)
1977 Census 1976 ASM 1975 ASM 1974 ASM 1973 ASM 1972 Census	14 (NA) (NA) (NA) (NA) 16	57 (NA) (NA) (NA) (NA) 61	52 (NA) (NA) (NA) (NA)	11.4 13.0 12.4 11.7 11.1 11.5	143.3 153.6 130.5 110.4 102.3 92.3	9.9 11.4 11.0 10.5 10.0 10.4	21.3 24.5 22.1 21.6 21.3 21.2	119.0 130.5 110.4 94.2 88.5 78.4	345.6 475.5 689.7 769.8 257.4 310.5	836.9 1 030.9 1 149.6 1 024.7 651.3 566.5	1 181.7 1 483.2 1 741.1 1 687.8 936.7 880.2	43.5 109.7 72.7 25.5 26.4 34.9	467.1 510.6 469.0 357.0 231.8 254.4	99 (NA) (NA) (NA) (NA) (NA)	99 (NA) (NA) (NA) (NA) 100
					INDUSTR	Y 2064,	CANDY A	ND OTHER	CONFECTION	ONERY PRO	DUCTS ¹¹				
1987 Census	624	685	295	45.8	899.5	37.0 NETRY	68.3	632.8	3 837.7	3 165.6	6 979.8	233.2	743.9	96	94
1987 Census	173	186	53	11,0	283.3	8.5	16.3	190.9	1 523.0	1 677.4	3 181.4	74.9	433.8	93	91
						5.5			HEWING GU		2 .5 1		. 35.3		
1987 Census 1986 ASM 1985 ASM 1984 ASM 1983 ASM	8 (NA) (NA) (NA) (NA)	13 (NA) (NA) (NA) (NA)	12 (NA) (NA) (NA) (NA)	5.2 5.4 5.3 5.7 5.4	125.5 125.5 118.9 115.2 101.0	4.3 4.3 4.2 4.6 4.3	8.0 8.2 7.9 8.4 7.9	93.0 91.2 85.0 82.4 75.0	749.7 732.3 654.6 672.8 592.2	347.1 354.3 349.9 342.3 375.3	1 090.3 1 082.3 1 004.1 1 014.8 967.1	23.1 25.1 (D) 24.4 20.0	128.3 123.2 132.2 121.7 132.9	(D) (NA) (NA) (NA) (NA)	(D) (NA) (NA) (NA) (NA)
1982 Census 1981 ASM 1980 ASM 1979 ASM 1978 ASM	9 (NA) (NA) (NA) (NA)	14 (NA) (NA) (NA) (NA)	14 (NA) (NA) (NA) (NA)	5.4 5.8 6.3 7.0 6.6	96.9 96.8 95.7 94.4 83.0	4.3 4.5 4.9 5.6 5.3	7.9 8.2 9.0 10.5 10.3	70.4 67.7 66.3 69.0 61.8	598.9 487.2 444.9 468.3 401.1	312.3 323.0 295.2 296.9 236.8	915.3 806.7 744.4 762.7 641.3	16.6 15.2 19.1 27.6 20.4	123.2 120.8 128.3 138.9 125.8	(D) (NA) (NA) (NA) (NA)	(D) (NA) (NA) (NA) (NA)
1977 Census 1976 ASM 1975 ASM 1974 ASM 1973 ASM 1972 Census	14 (NA) (NA) (NA) (NA)	18 (NA) (NA) (NA) (NA)	14 (NA) (NA) (NA) (NA) 16	7.7 6.5 5.7 6.4 7.0 6.9	83.9 73.3 57.6 57.2 57.1 53.6	6.0 5.3 4.6 5.2 5.6 5.8	11.6 10.8 8.9 10.1 10.7 11.5	62.7 56.3 44.2 43.9 41.0 41.3	335.5 317.7 276.4 239.2 253.2 228.4	233.0 223.3 207.0 196.7 150.7 150.5	566.5 538.4 480.8 431.5 404.2 382.6	22.1 19.7 14.5 11.4 10.6 19.0	116.4 125.1 109.3 95.1 76.7 72.2	92 (NA) (NA) (NA) (NA) (NA)	77 (NA) (NA) (NA) (NA) (NA) 88
	,,,	,,,		3.0					OASTED NU			.0.0	,		
1987 Census	79	88	65	8.8	172.1	6.9	13.4	115.3	866.8	1 291.2	2 178.0	28.0	249.3	91	94

Table 1a-1. Historical Statistics for the Industry (1987 Basis): 1987 and Earlier Years-Con.

¹In annual survey of manufactures (ASM) years, data are estimates based on a representative sample of establishments canvassed annually and may differ from results of a complete canvass of all establishments. ASM publication shows percentage standard errors. Unless otherwise noted, for data prior to 1972, see 1972 Census of Manufactures, vol. II, table 1a of the Industry chapter.

For the Census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

3Includes establishments with payroll at any time during year.

4Beginning with the 1982 Census of Manufactures, all respondents were requested to report their inventories at (the lower of) cost or market prior to adjustment to LIFO cost. This is a change from prior Censuses and annual surveys of manufactures in which respondents were permitted to value their inventories using any generally accepted accounting method. Consequently, inventories and value added by manufacture are not comparable to prior-year data.

5Detailed data on materials consumed by type are shown in table 7.

6Detailed data on new machinery and equipment expenditures are provided in table 3c.

7Represents ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for establishments classified in the industry.

9Represents ratio of primary products shipped by establishments classified of industry to total shipments of such products by all manufacturing establishments, wherever classified.

9Estimates for other data items are of acceptable reliability.

10Data either have associated standard errors exceeding 15 percent or more and may be of limited reliability. Estimates for other data items are of acceptable reliability.

11Industry definition is new for 1987 Census of Manufactures. An explanation of the Standard Industrial Classifications revision appears in the Summary of Findings of this report.

Table 1a-2. Historical Statistics for the Industry (1972 Basis): 1987 and Earlier Years

[Table 1a-2 contains the historical data on the old SIC basis. See table 1c-1 for composition of the new industry on the old SIC basis. Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

		All establ	ishments	All em	ployees	Pro	duction wor	kers						Rat	tios
Year	Com- panies (no.)	Total (no.)	With 20 employ- ees or more (no.)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)	Value added by manufac- ture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of- year inven- tories (million dollars)	Spe- cial- ization (per- cent)	Cover- age (per- cent)
						INDUS	STRY 2065	, CONFEC	TIONERY PF	ODUCTS					
1987 Census 1986 ASM 1985 ASM 1984 ASM 1983 ASM	675 (NA) (NA) (NA) (NA)	773 (NA) (NA) (NA) (NA)	360 (NA) (NA) (NA) (NA)	54.5 53.2 54.6 56.2 56.0	1 071.6 1 004.7 977.6 966.4 910.0	43.9 42.2 43.3 44.7 44.9	81.7 80.4 81.2 84.4 85.1	748.1 703.3 679.0 661.3 637.0	4 704.5 4 260.4 4 046.5 3 737.2 3 497.1	4 456.8 4 059.7 3 871.3 4 024.0 3 661.8	9 157.8 8 304.7 7 913.5 7 780.0 7 174.9	261.2 273.0 313.3 222.3 225.8	993.2 949.3 877.1 891.3 899.2	(AZ) (AZ) (AZ) (AZ) (AZ)	(NA) (NA) (NA) (NA) (NA)
1982 Census 1981 ASM 1980 ASM 1979 ASM	718 (NA) (NA) (NA) (NA)	804 (NA) (NA) (NA) (NA)	350 (NA) (NA) (NA) (NA)	54.2 54.1 54.2 54.9 56.3	857.6 768.4 695.8 646.6 619.7	44.0 43.3 44.3 45.6 46.5	83.0 83.3 83.6 85.2 89.0	603.2 550.0 499.0 469.3 445.0	3 276.1 2 657.3 2 553.4 2 284.5 2 222.5	3 572.1 3 678.1 3 288.5 2 801.1 2 590.1	6 773.1 6 333.6 5 770.6 5 069.1 4 785.3	208.0 152.9 196.4 98.7 112.7	925.9 692.2 679.0 579.8 528.8	94 (NA) (NA) (NA) (NA)	96 (NA) (NA) (NA) (NA)
1977 Census 1976 ASM 1975 ASM 1974 ASM 1973 ASM	865 (NA) (NA) (NA) (NA) 917	962 (NA) (NA) (NA) (NA) 1 011	343 (NA) (NA) (NA) (NA) 394	58.0 59.0 57.3 60.9 60.7 60.7	584.2 543.2 475.5 484.6 445.7 422.2	47.0 47.1 45.2 48.5 47.1 49.2	89.1 87.1 81.0 89.2 91.3 95.9	415.5 380.5 330.3 337.0 307.2 299.3	2 024.3 1 623.1 1 399.1 1 337.5 1 112.5 1 115.7	2 478.1 2 184.7 2 109.0 2 041.2 1 516.2 1 364.1	4 494.7 3 804.1 3 540.2 3 340.3 2 591.5 2 472.5	115.5 86.9 63.6 80.5 64.8 53.4	450.2 445.5 395.7 449.6 372.7 289.8	95 (NA) (NA) (NA) (NA)	89 (NA) (NA) (NA) (NA) 95
					11	IDUSTRY	2066, CH	OCOLATE	AND COCO	A PRODUCT	s				
1987 Census 1986 ASM 1985 ASM 1984 ASM 1983 ASM	156 (NA) (NA) (NA) (NA)	164 (NA) (NA) (NA) (NA)	23) (823) (823) (823)	10.1 10.5 10.8 10.7 10.1	262.9 263.6 251.5 236.1 221.2	7.9 8.2 8.6 8.4 7.9	15.3 15.8 17.1 17.3 16.6	181.3 178.7 176.1 169.3 159.7	1 444.9 1 088.9 1 136.8 1 052.0 1 071.0	1 533.1 1 496.3 1 459.8 1 459.4 1 165.2	2 959.8 2 586.7 2 595.6 2 484.4 2 258.8	70.6 85.1 (D) 70.1 62.7	408.3 454.8 420.6 389.8 394.1	(NA) (NA) (NA) (NA) (NA)	(NA) (NA) (NA) (NA) (NA)
1982 Census 1981 ASM 1980 ASM 1979 ASM 1978 ASM	77 (NA) (NA) (NA) (NA)	86 (NA) (NA) (NA) (NA)	29 (NA) (NA) (NA) (NA)	10.1 11.2 9.8 10.7 10.0	205.7 196.6 165.5 156.1 143.9	7.9 8.9 7.6 8.5 7.2	16.2 17.8 16.4 16.9 14.0	146.4 140.1 119.3 111.3 92.1	1 006.7 869.7 813.9 686.5 617.0	1 217.1 1 304.8 1 214.8 1 240.0 1 189.4	2 217.4 2 152.2 2 026.7 1 902.9 1 780.3	53.8 43.4 36.1 31.5 31.1	356.0 257.2 211.7 236.4 227.8	91 (NA) (NA) (NA) (NA)	88 (NA) (NA) (NA) (NA)
1977 Census 1976 ASM 1975 ASM 1974 ASM 1973 ASM 1972 Census	46 (NA) (NA) (NA) (NA) (NA) 39	56 (NA) (NA) (NA) (NA) 48	27 (NA) (NA) (NA) (NA) 30	10.0 9.0 8.7 9.7 10.6 10.0	130.2 108.9 91.9 97.1 95.8 83.3	7.2 6.6 6.3 7.2 8.3 8.0	13.9 12.6 12.2 14.1 16.5 15.5	84.0 71.2 60.1 64.5 69.0 60.6	640.6 445.0 377.7 355.6 304.7 282.6	996.3 816.8 796.2 806.2 553.5 455.2	1 629.2 1 269.8 1 170.3 1 131.7 857.0 735.5	35.0 21.2 17.2 15.9 20.3 26.5	175.1 173.6 177.8 226.0 133.6 122.9	94 (NA) (NA) (NA) (NA) 93	94 (NA) (NA) (NA) (NA) 93

Note: For qualifications of data, see footnotes on table 1a

Table 1b-1. Selected Operating Ratios for the Industry (1987 Basis): 1987 and Earlier Years

[Industries with only 1987 data are revised for 1987. Table 2b-1 contains historical data on the old SIC basis. See table 1c-1 for composition of the new industry on the old SIC basis. Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industries with only 1987 data for auxiliaries. For	meaning of abbrevi	ations and symbols,	see introductory t	ext. For explanation	n of terms, see ap	pendixes]	suon or the new inc	dustry of the old Si	C Dasis. Excludes
Year	Payroll per employee (dollars)	Production workers as percent of total employment (percent)	Annual hours of production workers (number)	Average hourly earnings of production workers (dollars)	Cost of materials as percent of value of shipments (percent)	Cost of materials and payroll as percent of value of shipments (percent)	Value added per employee (dollars)	Payroll as percent of value added (percent)	Value added per production worker hour (dollars)
				INDUSTRY	2061, RAW C	ANE SUGAR			
1987 Census	23 113 22 078 20 794 19 351 18 565	77 78 79 78 80	2 292 2 260 2 148 2 207 2 131	9.85 9.35 9.21 8.31 8.17	64 63 66 64 64	75 75 78 76 75	81 323 67 125 66 426 60 784 62 947	28 33 31 32 29	45.84 38.02 38.94 35.14 36.80
1982 Census	17 840 17 641 16 173 14 585 13 208	77 82 81 81 78	2 259 2 266 2 304 2 263 2 196	7.67 7.45 6.89 6.43 5.64	68 65 53 58 62	80 75 61 70 75	39 693 66 026 111 870 39 143 41 375	45 27 14 37 32	22.73 35.52 59.84 21.24 24.22
1977 Census	11 975 12 296 11 333 10 014 9 366 8 549	79 78 79 77 79 73	2 159 2 333 2 242 2 352 2 375 2 365	5.21 5.16 4.78 4.10 3.76 3.58	63 60 53 47 62 64	76 74 61 53 74 79	34 463 30 395 58 256 105 300 30 915 21 366	35 40 19 10 30 40	20.27 16.75 32.69 58.04 16.50 12.33
				INDUSTRY 2	062, CANE SUC	GAR REFINING			
1987 Census	32 255 32 600 30 310 26 770 25 671	76 75 74 76 76	2 143 2 244 2 186 2 071 2 034	14.49 14.45 14.13 12.59 11.98	81 79 78 82 80	89 86 84 89 86	80 982 100 218 100 603 72 486 83 066	40 33 30 37 31	49.49 59.91 62.07 46.24 53.50
1982 Census	23 759 23 723 21 428 19 357 17 854	75 73 73 72 72	2 065 2 116 2 097 2 085 2 122	10.90 10.73 9.87 8.98 8.10	80 84 82 77 76	86 90 87 84 84	74 988 60 383 81 898 61 327 50 553	32 39 26 32 35	48.63 38.88 53.15 40.61 33.17
1977 Census	16 558 15 359 13 752 13 128 11 490 10 963	71 71 70 72 74 75	2 139 2 096 2 068 2 244 2 167 2 207	7.56 7.03 6.36 5.63 4.96 4.63	78 79 83 84 79 78	85 85 87 88 86 86	51 588 53 466 45 667 80 615 39 236 35 220	32 29 30 16 29 31	34.17 35.99 31.75 50.21 24.61 21.21
				INDUST	TRY 2063, BEET	T SUGAR			
1987 Census	24 063 23 569 22 860 20 536 19 884	84 82 84 85 85	2 182 2 246 2 227 2 100 2 167	10.49 9.96 9.71 9.16 8.71	70 65 67 67 69	80 76 77 76 78	77 620 84 215 66 367 80 439 68 064	31 28 34 26 29	42.58 45.57 35.67 44.87 37.13
1982 Census 1981 ASM 1980 ASM 1979 ASM 1978 ASM	16 446 15 873 14 363 14 536 13 888	85 85 86 84 87	1 966 1 966 1 953 2 037 1 989	7.88 7.56 6.81 6.82 6.58	73 71 68 72 71	84 80 76 82 83	41 961 52 553 53 263 38 691 32 528	39 30 27 38 43	24.98 31.29 31.77 22.75 18.79
1977 Census	12 570 11 815 10 524 9 435 9 216 8 026	87 88 89 90 90	2 152 2 149 2 009 2 057 2 130 2 038	5.59 5.33 5.00 4.36 4.15 3.70	71 70 66 61 70 64	83 80 74 67 80 75	30 316 36 577 55 621 65 795 23 189 27 000	41 32 19 14 40 30	16.23 19.41 31.21 35.64 12.08 14.65
			INDUSTRY	2064, CANDY	AND OTHER CO	ONFECTIONERY	PRODUCTS		
1987 Census	19 640	81	1 846	9.27	45	58	83 793	23	56.19
			INDU	JSTRY 2066, CH	OCOLATE ANI	D COCOA PROD	UCTS		
1987 Census	25 755	77	1 918	11.71	53	62	138 455	19	93.44
1007.0					RY 2067, CHEW				
1987 Census	24 135 23 240 22 433 20 210 18 703	83 80 79 81 80	1 860 1 907 1 881 1 826 1 837	11.63 11.12 10.76 9.81 9.49	32 33 35 34 39	43 44 47 45 49	144 173 135 611 123 509 118 035 109 667	17 17 18 17 17	93.71 89.30 82.86 80.10 74.96
1982 Census 1981 ASM 1980 ASM 1979 ASM 1978 ASM	17 944 16 689 15 190 13 485 12 575	80 78 78 80 80	1 837 1 822 1 837 1 875 1 943	8.91 8.26 7.37 6.57 6.00	34 40 40 39 37	45 52 53 51 50	110 907 84 000 70 619 66 900 60 773	16 20 22 20 21	75.81 59.41 49.43 44.60 38.94
1977 Census 1976 ASM 1975 ASM 1974 ASM 1974 ASM 1973 ASM 1972 Census	10 896 11 276 10 105 8 937 8 157 7 768	78 82 81 81 80 84	1 933 2 038 1 935 1 942 1 911 1 983	5.41 5.21 4.97 4.35 3.83 3.59	41 41 43 46 37 39	56 55 55 59 51 53	43 571 48 877 48 491 37 375 36 171 33 101	25 23 21 24 23 23	28.92 29.42 31.06 23.68 23.66 19.86
Son footpoton at									

Table 1b-1. Selected Operating Ratios for the Industry (1987 Basis): 1987 and Earlier Years —Con.

[Industries with only 1987 data are revised for 1987. Table 2b-1 contains historical data on the old SIC basis. See table 1c-1 for composition of the new industry on the cld SIC basis. Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Year	Payroll per employee (dollars)	Payroll percent of Annual hours earning per total of production production employee employment (dollars) (percent) (number) (do		production	Cost of materials as percent of value of shipments (percent)	payroll as percent of value of shipments	Value added per employee (dollars)	Payroll as percent of value added (percent)	
	INDUS		TRY 2068, SAL	TED AND ROAS	STED NUTS AND	SEEDS			
1987 Census	19 557	78	1 942	8.60	59	67	98 500	20	64.69

Note: For qualifications of data, see footnotes on table 1a.

Table 1b-2. Selected Operating Ratios for the Industry (1972 Basis): 1987 and Earlier Years

[Table 1b-2 contains the historical data on the old SIC basis. See table 1c-1 for composition of the new industry on the old SIC basis. Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Year	Payroll per employee (dollars)	Production workers as percent of total employment (percent)	Annual hours of production workers (number)	Average hourly earnings of production workers (dollars)	Cost of materials as percent of value of shipments (percent)	Cost of materials and payroll as percent of value of shipments (percent)	Value added per employee (dollars)	Payroll as percent of value added (percent)	Value added per production worker hour (dollars)
				INDUSTRY 2065	, CONFECTION	ERY PRODUCT	S		
1987 Census	19 662	81	1 861	9.16	49	60	86 321	23	57.58
1986 ASM	18 885	79	1 905	8.75	49	61	80 083	24	52.99
1985 ASM	17 904	79	1 875	8.36	49	61	74 112	24	49.83
1984 ASM	17 195	80	1 888	7.84	52	64	66 498	26	44.28
1983 ASM	16 250	80	1 895	7.49	51	64	62 448	26	41.09
1982 Census	15 822	81	1 886	7.27	53	65	60 445	26	39.47
1981 ASM	14 203	80	1 924	6.60	58	70	49 118	29	31.90
1980 ASM	12 837	82	1 887	5.97	57	69	47 111	27	30.54
1979 ASM	11 777	83	1 868	5.51	55	68	41 612	28	26.81
1978 ASM	11 007	83	1 914	5.00	54	67	39 476	28	24.97
1977 Census	10 072	81	1 896	4.66	55	68	34 902	29	22.72
	9 206	80	1 849	4.37	57	72	27 510	33	18.63
	8 298	79	1 792	4.08	60	73	24 417	34	17.27
	7 957	80	1 839	3.78	61	76	21 962	36	14.99
	7 342	78	1 938	3.36	59	76	18 328	40	12.19
	6 955	81	1 949	3.12	55	76	18 381	38	11.63
			IND	USTRY 2066, CH	OCOLATE ANI	D COCOA PROD	UCTS		
1987 Census	26 030	78	1 937	11.85	52	61	143 059	18	94.44
	25 104	78	1 927	11.31	58	68	103 705	24	68.92
	23 287	80	1 988	10.30	56	66	105 259	22	66.48
	22 065	79	2 060	9.79	59	68	98 318	22	60.81
	21 900	78	2 101	9.62	52	61	106 040	21	64.52
1982 Census	20 366 17 553 16 887 14 588 14 390	78 79 78 79 72	2 051 2 000 2 158 1 988 1 944	9.04 7.87 7.27 6.59 6.58	55 61 60 65 67	64 70 68 73 75	99 673 77 652 83 051 64 159 61 700	20 23 20 23 23 23	62.14 48.86 49.63 40.62 44.07
1977 Census	13 020	72	1 931	6.04	61	69	64 060	20	46.09
	12 100	73	1 909	5.65	64	73	49 444	24	35.32
	10 563	72	1 937	4.93	68	76	43 414	24	30.96
	10 010	74	1 958	4.57	71	80	36 660	27	25.22
	9 037	78	1 988	4.18	65	76	28 745	31	18.47
	8 330	80	1 938	3.91	62	73	28 260	29	18.23

Note: For qualifications of data, see footnotes on table 1a.

Table 1c-1. 1987 Statistics for the Industry Showing the Distribution of 1987 SIC-Based Industries Among 1972 SIC-Based Industries

[Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

		All em	ployees	Pro	duction wo	kers	Value added by			New capital	End-of-
Industry	All estab- lish- ments (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)	manufac- ture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	expend- itures (million dollars)	year inven- tories (million dollars)
New Industry 2064, Candy and Other Confectionery ProductsOld Industry 2065, Confectionery Products	685	45.8	899.5	37.0	68.3	632.8	3 837.7	3 165.6	6 979.8	233.2	743.9
	685	45.8	899.5	37.0	68.3	632.8	3 837.7	3 165.6	6 979.8	233.2	743.9
New Industry 2066, Chocolate and Cocoa Products Old Industry 2066, Chocolate and Cocoa Products Old Industry 2099, Food Preparations, N.E.C	186	11.0	283.3	8.5	16.3	190.9	1 523.0	1 677.4	3 181.4	74.9	433.8
	164	10.1	262.9	7.9	15.3	181.3	1 444.9	1 533.1	2 959.8	70.6	408.3
	22	1.0	20.4	.6	1.0	9.7	78.1	144.3	221.6	4.2	25.5
New Industry 2068, Salted and Roasted Nuts and SeedsOld Industry 2065, Confectionery Products	88	8.8	172.1	6.9	13.4	115.3	866.8	1 291.2	2 178.0	28.0	249.3
	88	8.8	172.1	6.9	13.4	115.3	866.8	1 291.2	2 178.0	28.0	249.3

Note: For qualifications of data, see footnotes on table 1a.

Table 1c-2. 1987 Statistics for the Industry Showing the Distribution of 1972 SIC-Based Industries Among 1987 SIC-Based Industries

[Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

		All em	ployees	Pro	duction wo	kers	Value			New	Falat
Industry	All estab- lish- ments (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)	added by manufac- ture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	capital expend- itures (million dollars)	End-of- year inven- tories (million dollars)
Old Industry 2065, Confectionery Products New Industry 2064, Candy and Other Confectionery	773	54.5	1 071.6	43.9	81.7	748.1	4 704.5	4 456.8	9 157.8	261.2	993.2
Products	685	45.8	899.5	37.0	68.3	632.8	3 837.7	3 165.6	6 979.8	233.2	743.9
New Industry 2068, Salted and Roasted Nuts and Seeds	88	8.8	172.1	6.9	13.4	115.3	866.8	1 291.2	2 178.0	28.0	249.3
Old Industry 2066, Chocolate and Cocoa Products New Industry 2066, Chocolate and Cocoa Products_	164 164	10.1 10.1	262.9 262.9	7.9 7.9	15.3 15.3	181.3 181.3	1 444.9 1 444.9	1 533.1 1 533.1	2 959.8 2 959.8	70.6 70.6	408.3 408.3

Note: For qualifications of data, see footnotes on table 1a.

Table 2. Industry Statistics for Selected States: 1987 and 1982

[Excludes data for auxiliaries. States with 150 employees or more are shown. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Excludes data for adxillaries. States		1 130 emp	loyees of	illore are si	IIOWII. I OI I	nearing of	abbievialic	ons and syn	ibois, see iiito	ductory text.	OI EXPIANATION	TOT terms, s	вее аррепс	ikesj
							198	7						1982
		All estab	lishments	All em	ployees	Pro	duction wo	rkers						
Industry and geographic area	E¹	Total (no.)	With 20 employ- ees or more (no.)	Number ² (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)	Value added by manufac- ture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expend-itures (million dollars)	All employ- ees ² (1,000)	Value added by manufac- ture (million dollars)
INDUSTRY 2061, RAW CANE SUGAR														
United States	-	40	40	6.2	143.3	4.8	11.0	108.4	504.2	792.1	1 239.4	46.2	7.5	297.7
Florida Hawaii Louisiana Texas	-	7 11 21 1	7 11 21 1	1.9 2.0 EE BB	60.4 46.3 (D) (D)	1.5 1.5 (D) (D)	3.5 3.5 (D) (D)	46.5 32.5 (D) (D)	235.8 193.6 (D) (D)	397.2 163.8 (D) (D)	581.7 357.6 (D) (D)	(D) 25.1 (D) (D)	1.9 2.9 1.8 CC	99.5 136.1 (D) (D)
INDUSTRY 2062, CANE SUGAR REFINING														
United States	-	21	16	5.5	177.4	4.2	9. 0	130.4	445.4	2 002.8	2 460.2	32.7	8.3	622.4
California Georgia Louisiana Maryland Massachusetts New York Texas		1 2 6 1 2 4 1	1 1 4 1 2 3	EE CC 1.1 CC BB EE CC	(D) (D) 36.7 (D) (D) (D)	(D) (D) (D) (D) (D)	(D) (D) 1.9 (D) (D) (D)	(D) (D) 27.9 (D) (D) (D) (D)	(D) (D) 79.0 (D) (D) (D) (D)	(D) (D) 496.0 (D) (D) (D) (D)	(D) (D) 571.6 (D) (D) (D) (D)	(D) (D) 1.8 (D) (D) (D) (D)	EE CC 2.0 CC CC 1.6 CC	(D) (D) 117.3 (D) (D) 159.7 (D)

Table 2. Industry Statistics for Selected States: 1987 and 1982—Con.

[Excludes data for auxiliaries. State	T		.0,000 01				1987							1982
		All establ	ishments	All emr	oloyees	Pro	duction worl							
Industry and geographic area	E1	Total (no.)	With 20 employ- ees or more (no.)	Number ² (1,000)	Payroli (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)	Value added by manufac- ture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	All employ- ees ² (1,000)	Value added by manufac- ture (million dollars)
INDUSTRY 2063, BEET SUGAR														
United States		42 10 2 3 5 4 2 3 3 1	38 10 2 3 5 4 2 3 3 1 1	7.9 EE BB EE CC EE BB BB CC BB BA AA BB	190.1 (0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,	6.6 (D) (D) (D) (D) (D) (D) (D) (D) (D) (D)	14.4 (D) (D) (D) (D) (D) (D) (D) (D) (D) (D)	151.0 (D) (D) (D) (D) (D) (D) (D) (D) (D) (D)	613.2 (D) (D) (D) (D) (D) (D) (D) (D) (D) (D)	1 277.0 (D) (D) (D) (D) (D) (D) (D) (D) (D)	1 831.5 (D) (D) (D) (D) (D) (D) (D) (D) (D) (D)	42. 5 (0) (0) (0) (0) (0) (0) (0) (0) (0) (0)	10.3 2.4 CCECCE BCCCBBACCBBACC	432.2 74.9 (D) (D) (D) (D) (D) (D) (D) (D) (D)
INDUSTRY 2064, CANDY AND OTHER CONFECTIONERY PRODUCTS	-	3	3	DB	(0)	(6)	(D)	(6)	(0)	(6)	(0)	(0)		(D)
United States		685	2 9 5	45.8	899.5	37.0	68.3	632.8	3 837.7	3 165.6	6 979.8	233.2	(NA)	(NA)
Alabama California Colorado Connecticut. Florida	E1	6 80 9 9	1 30 3 5 3	BB FF CC CC BB	(D) (D) (D) (D) (D)	(D) (D) (D) (D) (D)	(D) (D) (D) (D) (D)	(D) (D) (D) (D) (D)	(D) (D) (D) (D) (D)	(D) (D) (D) (D) (D)	(D) (D) (D) (D)	(D) (D) (D) (D)	(NA) (NA) (NA) (NA) (NA)	(AN) (AN) (AN) (AN) (AN)
Georgia Hawaii Illinois Indiana Iowa	E1	19 12 61 11 3	7 5 34 5 3	EE BB 10.7 CC AA	(D) (D) 245.0 (D) (D)	(D) (D) 9.0 (D) (D)	(D) (D) 17.0 (D) (D)	(D) (D) 190.7 (D) (D)	(D) (D) 1 080.9 (D) (D)	(D) (D) 781.0 (D) (D)	(D) (D) 1 854.4 (D) (D)	(D) (D) 67.9 (D) (D)	(NA) (NA) (NA) (NA) (NA)	(NA) (NA) (NA) (NA) (NA)
Louisiana	E4 E1	15 9 30 16 12	4 5 15 4 8	.3 BB EE CC 1.0	4.0 (D) (D) (D) 17.7	2	.4 (D) (D) (D) 1.3	2.2 (D) (D) (D) 10.2	10.9 (D) (D) (D) (D) 64.3	13.4 (D) (D) (D) 78.9	24.5 (D) (D) (D) 142.1	.4 (D) (D) (D) (D)	(NA) (NA) (NA) (NA) (NA)	(NA) (NA) (NA) (NA) (NA)
Missouri New Jersey New York Ohio Ohio Oklahoma	E3	15 31 48 27 4	4 13 22 14 3	CC 1.9 2.4 1.4 BB	(D) 54.2 46.1 23.8 (D)	(D) 1.6 2.0 1.1 (D)	(D) 2.9 3.5 2.0 (D)	(D) 34.8 31.3 16.1 (D)	(D) 328.9 124.8 93.2 (D)	(D) 307.0 122.4 73.6 (D)	(D) 635.2 250.1 165.3 (D)	(D) 25.9 6.1 (D) (D)	(NA) (NA) (NA) (NA) (NA)	(NA) (NA) (NA) (NA) (NA)
Pennsylvania Rhode Island South Carolina Tennessee Texas	- - -	87 3 3 11 31	49 2 1 6 13	8.0 BB BB EE EE	143.3 (D) (D) (D) (D)	6.6 (D) (D) (D) (D)	11.8 (D) (D) (D) (D)	103.8 (D) (D) (D) (D)	628.6 (D) (D) (D) (D)	513.0 (D) (D) (D) (D)	1 135.8 (D) (D) (D) (D)	31.9 (D) (D) (D) (D)	(NA) (NA) (NA) (NA) (NA)	(NA) (NA) (NA) (NA) (NA)
Utah	E1	13 15 13 15	5 7 6 10	BB 1.0 .6 CC	(D) 17.3 11.4 (D)	(D) .8 .5 (D)	(D) 1.5 .8 (D)	(D) 11.6 6.8 (D)	(D) 48.0 38.0 (D)	(D) 77.0 23.6 (D)	(D) 118.4 61.5 (D)	(D) (D) .9 (D)	(NA) (NA) (NA) (NA)	(NA) (NA) (NA) (NA)
INDUSTRY 2066, CHOCOLATE AND COCOA PRODUCTS														
United States		186	53	11.0	283.3	8.5	16.3	190.9	1 523.0	1 677.4	3 181.4	74.9	(NA)	(NA)
California	- E1	24 9 2 6 12	10 5 2 1 6	1.8 .7 AA AA BB	42.3 17.1 (D) (D) (D)	1.4 .6 (D) (D) (D)	2.6 1.3 (D) (D) (D)	30.2 11.2 (D) (D) (D)	314.7 64.3 (D) (D) (D)	234.5 137.6 (D) (D) (D)	542.7 200.2 (D) (D) (D)	13.2 (D) (D) (D) (D)	(NA) (NA) (NA) (NA) (NA)	(NA) (NA) (NA) (NA) (NA)
New York Ohio Pennsylvania Wisconsin	E3	29 14 22 6	6 4 7 3	EE AA 4.2 EE	(D) (D) 130.1 (D)	(D) (D) 3.3 (D)	(D) (D) 6.3 (D)	(D) (D) 88.7 (D)	(D) (D) 610.0 (D)	(D) (D) 617.7 (D)	(D) (D) 1 220.3 (D)	(D) (D) 31.6 (D)	(NA) (NA) (NA) (NA)	(AA) (AA) (AA) (AA)
INDUSTRY 2067, CHEWING GUM														
United States		13	12		125.5	4.3	8.0	93.0	749.7	347.1	1 090.3	23.1	5.4	598.9
California	-	1 1 3 1 4	1 1 3 1 3 1	BB BB EE BB EE BB	(D) (D) (D) (D) (D)	(D) (D) (D) (D) (D)	(D) (D) (D) (D) (D)	(D) (D) (D) (D) (D)	(D) (D) (D) (D) (D) (D)	(D) (D) (D) (D) (D)	(D) (D) (D) (D) (D) (D)	(D) (D) (D) (D) (D)	CC BB EE BB EE CC	(D) (D) (D) (D) (D)

Table 2. Industry Statistics for Selected States: 1987 and 1982-Con.

[Excludes data for auxiliaries. States with 150 employees or more are shown. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

							198	7						1982
		All establ	lishments	All em	ployees	Pro	duction wo	kers						
Industry and geographic area	E¹	Total (no.)	With 20 employ- ees or more (no.)	Number ² (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)	Value added by manufac- ture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	All employ- ees ² (1,000)	Value added by manufac- ture (million dollars)
INDUSTRY 2068, SALTED AND ROASTED NUTS AND SEEDS														
United States	-	88	65	8.8	172.1	6.9	13.4	115.3	866.8	1 291.2	2 178.0	28.0	(NA)	(NA)
AlabamaArkansas	- 1 1 1 1	3 1 15 8 1	3 1 12 8 1	BB BB 3.3 CC BB	(D) (D) 68.9 (D) (D)	(D) (D) 2.6 (D) (D)	(D) (D) 5.4 (D) (D)	(D) (D) 49.1 (D) (D)	(D) (D) 413.5 (D) (D)	(D) (D) 434.5 (D) (D)	(D) (D) 857.4 (D) (D)	(D) (D) (D) (D)	(NA) (NA) (NA) (NA) (NA)	(NA) (NA) (NA) (NA) (NA)
Illinois Massachusetts Minnesota North Carolina Ohio	1111	6 3 5 6 5	4 3 4 5 3	BB AA CC CC AA	(D) (D) (D) (D)	(D) (D) (D) (D)	(D) (D) (D) (D) (D)	(D) (D) (D) (D)	(D) (D) (D) (D) (D)	(D) (D) (D) (D) (D)	(D) (D) (D) (D) (D)	(D) (D) (D) (D) (D)	(NA) (NA) (NA) (NA) (NA)	(NA) (NA) (NA) (NA) (NA)
Pennsylvania Texas Virginia	- E4	4 5 5	3 4 4	AA BB .2	(D) (D) 3.0	(D) (D) .2	(D) (D) .4	(D) (D) 2.5	(D) (D) 10.3	(D) (D) 22.4	(D) (D) 32.7	(D) (D) (D)	(NA) (NA) (NA)	(NA) (NA) (NA)

Note: For qualifications of data, see footnotes on table 1a.

¹Payroll and sales data for some small single-unit companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other Government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate the items shown for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown for those States where estimated value of shipments data based on administrative-record data account for 10 percent or more of figure shown: E1—10 to 19 percent; E2—20 to 29 percent; E3—30 to 39 percent; E4—40 to 49 percent; E5—50 to 59 percent; E6—60 to 69 percent; E7—70 to 79 percent; E8—80 to 89 percent; E9—90 percent or more.

25tatistics for some producing States have been withheld to avoid disclosing data for individual companies. However, for States with 150 employees or more, number of establishments is shown and employment-size range is indicated by one of the following symbols: AA—150 to 249 employees; BB—250 to 499 employees; CC—500 to 999 employees; EE—1,000 to 2,499 employees; FF—2,500 employees or more.

Table 3a. Summary Statistics for the Industry: 1987

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

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Item	Raw cane sugar (SIC 2061)	Cane sugar refining (SIC 2062)	Beet sugar (SIC 2063)	Candy and other confectionery products (SIC 2064)	Chocolate and cocoa products (SIC 2066)	Chewing gum (SIC 2067)	Salted and roasted nuts and seeds (SIC 2068)
Companiesnumber_	32	14	14	624	173	8	79
All establishments do_ With 1 to 19 employees do_ With 20 to 99 employees do_ With 100 employees or more do_	40 - 19 21	21 5 6 10	42 4 3 35	685 390 185 110	186 133 35 18	13 1 2 10	88 23 47 18
Employment and labor costs: Employees	6.2 176.5 143.3 33.2 17.9 15.2	5.5 219.5 177.4 42.1 18.3 23.8	7.9 234.0 190.1 43.8 23.8 20.0	45.8 1 142.5 899.5 242.9 101.9 141.1	11.0 348.0 283.3 64.7 28.9 35.8	5.2 162.5 125.5 37.0 12.5 24.4	8.8 214.7 172.1 42.6 19.5 23.1
Production workers: 1,000_ Average for year do_ March do_ August do_ November do_	4.8 4.8 3.7 4.0 6.7	4.2 4.2 4.2 4.2 4.3	6.6 5.3 5.4 5.6 10.2	37.0 35.3 33.4 37.9 40.9	8.5 8.3 8.0 8.8 8.8	4.3 4.0 4.3 4.5 4.2	6.9 6.3 5.9 6.9 8.3
Hours	11.0 2.6 2.2 2.2 4.0	9.0 2.2 2.2 2.2 2.3	14.4 3.2 2.6 2.9 5.7	68.3 16.1 15.0 17.5 19.6	16.3 3.9 4.1 4.0 4.4	8.0 1.9 2.1 2.1 2.0	13.4 3.0 2.9 3.3 4.2
Wagesmil dol	108.4	130.4	151.0	632.8	190.9	93.0	115.3
Value added by manufacture do	504.2	445.4	613.2	3 837.7	1 523.0	749.7	866.8
Cost of materials¹ do. Materials, parts, containers, etc., consumed² do. Resales do. Fuels do. Purchased electricity do. Contract work do.	792.1 750.8 (Z) 21.5 6.6 13.1	2 002.8 1 951.2 (D) 42.0 4.2 (D)	1 277.0 1 138.5 11.3 107.8 16.0 3.5	3 165.6 2 879.9 177.4 29.1 62.7 16.5	1 677.4 1 599.0 32.8 12.1 23.9 9.6	347.1 300.5 (D) 2.5 7.7 (D)	1 291.2 1 245.0 21.4 6.8 10.3 7.8
Quantity of electric energy used for heat and power: Purchased mil kWh_ Generated less sold do_	100.5 507.6	65.2 271.1	359.0 446.6	1 176.4 21.4	407.6 2.2	120.0	201.6
Total value of shipments	1 239.4 1 221.0 (D) (D) (Z) (D) (D)	2 460.2 2 411.8 6.1 42.3 (D) 36.3 (D)	1 831.5 1 812.1 - 19.4 12.9 (D) (D)	6 979.8 6 477.4 256.4 246.0 221.9 (D)	3 181.4 2 909.2 222.1 50.1 42.2 (D)	1 090.3 (D) (D) (D) (D) (D) (D)	2 178.0 1 937.3 202.6 38.0 27.6 (D)

Table 3a. Summary Statistics for the Industry: 1987—Con.

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Raw cane sugar (SIC 2061)	Cane sugar refining (SIC 2062)	Beet sugar (SIC 2063)	Candy and other confectionery products (SIC 2064)	Chocolate and cocoa products (SIC 2066)	Chewing gum (SIC 2067)	Salted and roasted nuts and seeds (SIC 2068)
Inventories by stage of fabrication: Beginning of 1987mil dol Finished goodsdo Work in processdo Materials and suppliesdo	262.0	322.9	578.1	749.2	473.3	121.8	272.2
	215.0	82.5	331.6	406.0	124.9	33.3	140.7
	.7	105.4	79.8	42.5	58.9	5.7	39.7
	46.2	135.0	166.8	300.6	289.5	82.8	91.7
End of 1987	321.9	309.9	630.7	743.9	433.8	128.3	249.3
	272.2	85.3	391.0	430.4	141.9	38.6	117.0
	.5	90.5	79.0	41.7	60.9	6.8	43.5
	49.2	134.0	160.7	271.8	231.0	82.9	88.8
Primary product specialization ratiopercent_ Coverage ratio	(D)	99 +	100	96	93	(D)	91
	(D)	99	99	94	91	(D)	94

Note: For qualifications of data, see footnotes on table 1a.

Table 3b. Gross Book Value of Depreciable Assets, Capital Expenditures, Retirements, Depreciation, and Rental Payments: 1987

[Million dollars. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

ltem	Raw cane sugar (SIC 2061)	Cane sugar refining (SIC 2062)	Beet sugar (SIC 2063)	Candy and other confectionery products (SIC 2064)	Chocolate and cocoa products (SIC 2066)	Chewing gum (SIC 2067)	Salted and roasted nuts and seeds (SIC 2068)
Gross book value of depreciable assets: Total: Beginning of year New capital expenditures¹ Used capital expenditures Retirements End of year.	981.1	609.0	933.7	2 060.0	716.3	316.3	433.7
	46.2	32.7	42.5	233.2	74.9	23.1	28.0
	6.0	1.6	9.6	18.4	1.7	.2	1.3
	15.5	11.2	17.8	54.8	11.9	4.8	13.2
	1 017.9	632.0	968.0	2 256.8	780.8	334.7	449.8
Buildings and other structures: Beginning of year New capital expenditures Used capital expenditures Retirements End of year Machinery and equipment:	182.1	137.1	118.6	508.4	152.1	103.0	130.7
	4.3	2.5	9.6	40.7	10.6	2.7	3.7
	(Z)	(Z)	2.3	7.4	.3	(Z)	.4
	2.0	.9	2.8	9.8	1.0	.1	2.6
	184.4	138.7	127.7	546.7	162.1	105.5	132.2
Beginning of year New capital expenditures! Used capital expenditures Retirements End of year	799.0	471.8	815.1	1 551.7	564.2	213.3	303.0
	42.0	30.2	32.9	192.5	64.2	20.5	24.3
	6.0	1.5	7.3	11.0	1.3	.2	.9
	13.4	10.2	15.0	45.1	11.0	4.7	10.6
	833.5	493.3	840.3	1 710.1	618.8	229.2	317.6
Depreciation charges during 1987 Total Buildings and other structures Machinery and equipment	54.7	29.6	47.1	137.5	35.4	19.1	27.6
	6.9	3.4	5.1	22.9	4.4	3.8	5.2
	47.8	26.2	42.0	114.6	31.0	15.3	22.5
Rental payments: Total Buildings and other structures Machinery and equipment	7.4	1.7	5.5	32.7	7.5	.7	6.8
	2.7	.4	.3	23.2	2.0	.5	3.2
	4.7	1.2	5.2	9.5	5.5	.2	3.6

Note: Retirements and depreciation data for establishments not included in the ASM sample were extrapolated from the historical ratio of retirements or depreciation to assets. These ratios were developed at the industry level.

Table 3c. Supplemental Industry Statistics Based on Sample Estimates: 1987

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

	Raw can (SIC 2		Cane suga (SIC 2		Beet (SIC:	sugar 2063)	Candy and other confectionery products (SIC 2064)	
Item	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)
Purchased services: Cost of purchased services for the repair of— Buildings and other structures Response coverage ratio (percent)² Machinery Response coverage ratio (percent)² Cost of purchased communication services Response coverage ratio (percent)²	.9 74.4 8.4 76.5 .7 66.5	(X) (X) (X) (X) (X) (X)	3.4 87.6 17.0 91.0 1.5 89.4	\$	1.9 88.4 9.7 97.0 1.1 88.4	\$88888	8.9 71.3 47.7 75.5 7.7 70.7	(X) (X) (X) (X) (X) (X)

¹Data on purchased services for the repair of buildings and machinery and for communication services are not included in cost of materials, etc., but are shown in table 3c. ²Data on materials consumed by type are shown in table 7. Data on amount purchased or transferred from foreign sources are shown in table 3c.

¹Data on new machinery and equipment expenditures by type are provided in table 3c.

Table 3c. Supplemental Industry Statistics Based on Sample Estimates: 1987—Con.

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

	Raw can (SIC 2			ugar refining C 2062)	Beet sug (SIC 200		confec	dy and other tionery products SIC 2064)
ltem	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amou (millio dollar	on estimate ¹	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amor (milli dolla	ion estimate ¹
New machinery and equipment expenditures Automobiles, trucks, etc. Computers and peripheral All other Adjustment ratio ³ Cost of materials, components, parts, etc., used Materials purchased or transferred from foreign sources ⁴	42.0 4.7 .2 37.0 1.1 750.8 .8	(X) 2 4 1 (X) (X)	1 28 1 1 951 583	.2 3 .3 3 .7 1 .0 (X) .2 (X)	32.9 .4 .3 32.2 1.0 1 138.5 .9	(X) 5 7 1 (X) (X) 5	18 2 87 39	1.3 26 3.3 7 7.9 1 1.1 (X) 9.9 (X) 7.9 4
Materials purchased or transferred from domestic sources	750.0 1.2	1 (X)	l	.2 (X)	1 137.6 1.0	1 (X)		1.4 (X)
•		and cocoa pro SIC 2066)	oducts	Chewir (SIC :		Saited a	(SIC 2	d nuts and seeds 2068)
' Item	Amo (mil dolla	ount lion e	Relative standard error of stimate ¹ percent)	Amount (million dollars)	Relative standard error o estimate (percent	f	Amount (million dollars)	Relative standard error of estimate ¹ (percent)
Purchased services: Cost of purchased services for the repair of- Buildings and other structures Response coverage ratio (percent) ² Machinery Response coverage ratio (percent) ² Cost of purchased communication services Response coverage ratio (percent) ²	7 1 8	3.6 71.4 0.9 80.0 2.2 33.8	(X) (X) (X) (X) (X) (X)	2.3 99.9 3.7 99.9 .8 79.3	(X (X (X (X (X (X		1.2 57.4 6.7 78.4 2.0 72.8	(X) (X) (X) (X) (X) (X)
New machinery and equipment expenditures Automobiles, trucks, etc. Computers and peripheral All other. Adjustment ratio ³	5	64.2 .3 8.1 55.9 1.1	(X) 13 1 1 (X)	20.5 .2 1.6 18.7 1.0	(X	3 1 1	24.3 1.1 .7 22.5 1.2	(X) 43 6 3 (X)
Cost of materials, components, parts, etc., used	71 88	99.0 0.6 38.4 1.2	(X) 2 2 (X)	300.5 10.7 289.8 1.0	(X (X	5	1 245.0 92.4 1 152.5 1.2	(X) 57 5 (X)

Industry Statistics by Employment Size of Establishment: 1987

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

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Industry and employment size class		All estab- lish-	All em	ployees Payroll	Pro	duction wo	rkers Wages	Value added by manufac- ture	Cost of materials	Value of shipments	New capital expend-	End-of- year inven- tories
	E1	ments (no.)	Number (1,000)	(million dollars)	Number (1,000)	Hours (millions)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)
INDUSTRY 2061, RAW CANE SUGAR												
Total	-	40	6.2	143.3	4.8	11.0	108.4	504.2	792.1	1 239.4	46. 2	3 21 .9
Establishments with an average of— 20 to 49 employees 50 to 99 employees 100 to 249 employees 250 to 499 employees		1 18 13 8	1.4 (D) 1.9 2.9	26.1 (D) 44.3 72.9	1.1 (D) 1.5 2.2	2.6 (D) 3.4 5.0	19.8 (D) 35.6 53.0	96.9 (D) 151.0 256.3	169.0 (D) 265.6 357.5	257.8 (D) 397.1 584.5	5.6 (D) 19.1 21.5	87.9 (D) 85.1 148.9
Covered by administrative records ²	-	-	-	-	-	-	-	-	-	-	-	-
INDUSTRY 2062, CANE SUGAR REFINING												
Total	-	21	5.5	177.4	4.2	9.0	130.4	445.4	2 002 .8	2 460.2	32.7	3 0 9.9
Establishments with an average of— 5 to 9 employees	-	2 3 2 4 2 3 4 1	(D) (D) (E) (D) 1.3 3.4 (D)	3.4 (D) (D) 17.1 (D) 51.5 105.4 (D)	. <u>1</u> (D) (D) . <u>5</u> (D) 1.0 <u>2.7</u> (D)	.3 (D) (D) .9 (D) 2.2 5.6 (D)	2.2 (D) (D) 12.0 (D) 36.4 79.8 (D)	11.1 (D) (D) 66.1 (D) 98.0 270.2 (D)	33.8 (D) (D) 252.2 (D) 613.8 1 103.0 (D)	47.0 (D) (D) 314.5 (D) 708.2 1 390.5 (D)	.4 (D) (D) 2.6 (D) 5.6 24.1 (D)	6.6 (D) (D) 71.2 (D) 101.2 130.9 (D)
Covered by administrative records ²	-	_	_	-	-	-	-	-	-	-	-	-

See footnotes at end of table.

¹For description of relative standard error of estimate, see Qualifications of the Data in appendixes.

²Measure of extent to which respondents reported each item. Derived for each item by calculating the ratio of weighted employment for those sample establishments that reported the specific inquiry to total employment for all establishments classified in industry. (See appendixes for explanation of sample weight.)

³Detail has been adjusted upwards to account for nonresponse. Inverse of the ratio shown represents a measure of the response to the inquiry. (See appendixes for further explanation.)

⁴Data may understate the true cost of imported parts, components, and supplies since some respondents do not know the origin of these materials. Includes cases where materials were purchased from secondary suppliers or where they were transferred from company-operated warehouses or other distribution points. Direct purchases from foreign suppliers and importers by domestic manufacturing establishments are believed to be reported accurately.

Table 4. Industry Statistics by Employment Size of Establishment: 1987—Con.

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

		All		on of terms, ployees		duction wor	kers	Value added by			New	End-of-
Industry and employment size class	E ¹	estab- lish- ments (no.)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)	manufac- ture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	capital expend- itures (million dollars)	year inven- tories (million dollars)
INDUSTRY 2063, BEET SUGAR												
Total	-	42	7.9	190.1	6.6	14.4	151.0	613.2	1 277.0	1 831.5	42.5	630.7
Establishments with an average of— 1 to 4 employees 5 to 9 employees 20 to 49 employees 50 to 99 employees 100 to 249 employees 250 to 499 employees Covered by administrative records ²		2 2 2 1 26 9	(D) (D) (D) 4.6 3.1	3.9 (D) (D) (D) 116.7 69.5	.1 (D) (D) (D) 3.9 2.6	.3 (D) (D) (D) 8.7 5.4	3.0 (D) (D) (D) 92.8 55.2	6.0 (D) (D) (D) 376.7 230.5	25.8 (D) (D) (D) 767.9 483.3	30.9 (D) (D) (D) 1 107.8 692.8	(D) (D) (D) 20.4 21.7	14.5 (D) (D) (D) 371.7 244.5
INDUSTRY 2064, CANDY AND OTHER CONFECTIONERY PRODUCTS												
Total	-	685	45.8	899.5	37.0	68.3	63 2 .8	3 837.7	3 165.6	6 979.8	233.2	743.9
Establishments with an average of— 1 to 4 employees 5 to 9 employees 10 to 19 employees 20 to 49 employees 100 to 249 employees 250 to 49 employees 250 to 499 employees 1,000 to 2,499 employees 2,500 employees or more Covered by administrative records ²	E7 E9 E8 E4 	189 91 110 110 75 61 37 9 2 1	.3 .6 1.5 3.6 5.3 9.6 12.9 12.0 (D)	3.5 7.0 21.4 51.0 85.2 181.4 252.3 297.8 (D) (D) 28.3	.2 .5 1.2 2.8 4.0 7.5 10.7 10.2 (D) (D)	.4 .8 2.1 4.5 7.1 14.2 21.0 18.2 (D) (D)	2.3 4.7 14.2 33.2 51.1 115.9 180.1 231.2 (D) (D)	16.5 28.8 79.6 167.6 245.7 552.3 960.1 1 787.2 (D) (D)	16.4 26.8 75.0 161.2 216.9 536.6 918.0 1 214.6 (D) (D)	32.9 55.7 155.8 329.5 461.3 1 093.2 1 885.4 2 966.0 (D) (D)	.7 1.2 3.9 6.6 13.3 27.9 70.2 109.4 (D) (D)	2.9 5.4 15.6 32.3 59.9 112.2 262.9 252.7 (D) (D)
INDUSTRY 2066, CHOCOLATE AND COCOA PRODUCTS												
Total	-	186	11.0	2 83.3	8.5	16.3	19 0 .9	1 523.0	1 677.4	3 181.4	74.9	433.8
Establishments with an average of— 1 to 4 employees 5 to 9 employees 10 to 19 employees 50 to 99 employees 100 to 249 employees 250 to 499 employees 500 to 999 employees 1,000 to 2,499 employees 2,500 employees Covered by administrative records²	E9 E7 E6 E3 	76 33 24 23 12 9 4 3 1 1	.1 .2 .3 .7 .8 1.2 1.3 63 (D)	1.7 2.5 4.8 8.6 18.6 29.1 33.4 184.6 (D) (D)	.1 .2 .2 .5 .5 .9 .9 <u>5.1</u> (D)	.2 .3 .4 .9 1.0 1.6 2.1 <u>9.9</u> (D)	1.2 1.8 2.7 5.3 9.6 16.5 21.4 132.4 (D) (D)	8.1 12.9 18.5 44.3 50.0 165.9 116.1 1 107.2 (D) (D)	9.4 17.8 24.3 62.6 195.9 282.5 217.4 867.6 (D) (D)	17.5 30.7 42.7 107.6 243.5 446.0 333.4 1 960.0 (D) (D)	.4 .5 1.6 2.5 2.9 9.7 5.3 52.1 (D) (D)	2.9 4.6 6.5 10.9 30.8 59.5 52.3 266.3 (D) (D)
INDUSTRY 2067, CHEWING GUM												
Total	-	13	5.2	125.5	4.3	8.0	93. 0	749.7	347.1	1 090.3	23.1	1 2 8.3
Establishments with an average of— 5 to 9 employees 50 to 99 employees 100 to 249 employees 250 to 499 employees 500 to 999 employees 1,000 to 2,499 employees. Covered by administrative records ²	111111	1 2 2 5 2 1	5.2 (D) (D) (D) (D) (D)	125.5 (D) (D) (D) (D) (D)	4.3 (D) (D) (D) (D) (D)	8.0 (D) (D) (D) (D) (D)	93.0 (D) (D) (D) (D) (D)	749.7 (D) (D) (D) (D) (D)	347.1 (D) (D) (D) (D) (D)	1 090.3 (D) (D) (D) (D) (D)	23.1 (D) (D) (D) (D) (D) (D)	128.3 (D) (D) (D) (D) (D)
INDUSTRY 2068, SALTED AND ROASTED NUTS AND SEEDS												
Total	-	88	8.8	172.1	6.9	13.4	115.3	866.8	1 291.2	2 178.0	28.0	249.3
Establishments with an average of— 1 to 4 employees 5 to 9 employees 10 to 19 employees 20 to 49 employees 100 to 249 employees 250 to 499 employees 1,000 to 2,499 employees Covered by administrative records²	-	7 3 13 26 21 10 7 1	(Z) (D) .2 .9 1.5 1.4 4.7 (D)	(D) 3.1 15.8 32.6 25.4 <u>94.7</u> (D)	(Z) (D) .1 .7 1.2 1.1 3.8 (D)	(Z) (D) .2 1.3 2.5 1.9 7.4 (D)	3 (D) 1.7 9.5 21.3 16.0 66.5 (D)	2.1 (D) 9.9 50.7 147.5 81.2 575.4 (D)	1.9 (D) 16.7 151.7 273.6 168.8 678.5 (D)	4.0 (D) 27.1 204.9 422.5 251.2 1 268.2 (D)	.1 (D) .5 3.1 4.6 3.0 16.7 (D)	.4 (D) 2.0 28.5 47.2 37.2 134.0 (D)

Note: For qualifications of data, see footnotes on table 1a. Data shown as a (D) are included in underscored figures above.

¹Payroll and sales data for some small single unit companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other Government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate the items shown for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at the time data were tabulated. The following symbols are shown for those employment-size classes where estimated data based on administrative-record data account for 10 percent or more of figures shown: E1—10 to 19 percent; E2—20 to 29 percent; E3—30 to 39 percent; E4—40 to 49 percent; E5—50 to 59 percent; E6—60 to 69 percent; E7—70 to 79 percent; E8—80 to 89 percent; E9—90 percent or more.

²Report forms were not mailed to small single unit companies with up to 20 employees (cutoff varied by industry). Payroll and sales data for 1987 were obtained from administrative records supplied by other agencies of the Federal Government. Those data were then used in conjunction with industry averages to estimate the items shown. Data are also included in respective employment-size classes shown.

Table 5a. Industry Statistics by Industry and Primary Product Class Specialization: 1987

[Table presents selected statistics for establishments according to their degree of specialization in products primary to their industry. Measures of plant specialization shown are (1) industry specialization: ratio of primary product shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment; and (2) product class specialization: ratio of largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment. See appendix for method of computing ratios. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

indus- try or		All	All em	ployees	Pr	oduction work	ers	Value added by			New capital
prod- uct class code	Industry or primary product class	estab- lish- ments (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)	manufac- ture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	expend- itures (million dollars)
2061	Raw cane sugar: All establishments in industry	40	6.2	143.3	4.8	11.0	108.4	504.2	792.1	1 239.4	46.2
2062	Cane sugar refining: All establishments in industry	21	5.5	177.4	4.2	9.0	130.4	445.4	2 002.8	2 460.2	32.7
2063	Beet sugar: All establishments in industry	42	7.9	190.1	6.6	14.4	151.0	613.2	1 277.0	1 831.5	42.5
2064	Candy and other confectionery products: All establishments in industry	685	45.8	899.5	37.0	68.3	632.8	3 837.7	3 165.6	6 979.8	233.2
20642 20643 20649	Establishments with this product class primary: Chocolate and chocolate-type confectionery products made from purchased chocolate Nonchocolate-type confectionery products Other confectionery-type products	129 120 8	21.5 19.2 .6	446.3 385.5 14.0	17.4 15.7 .5	32.3 29.2 1.1	311.7 276.7 7.8	2 312.4 1 265.1 35.8	1 962.1 953.6 40.0	4 236.3 2 233.3 75.9	157.6 64.2 1.7
20 66	Chocolate and cocoa products: All establishments in industry	186	11.0	283.3	8.5	16.3	190.9	1 523.0	1 677.4	3 181.4	74.9
20661 20662	Establishments with this product class primary: Chocolate coatingsChocolate and chocolate-type confectionery products	9	.6	14.1	.4	.8	8.2	42.2	186.5	226.5	2.6
20669	made from cocoa beans ground in same establishment Other chocolate and cocoa products	11 24	7.2 2.3	210.8 47.8	5.7 1.6	11.3 2.9	147.5 27.7	1 084.8 346.3	1 027.0 404.2	2 096.6 748.8	54.1 15.8
2067	Chewlng gum: All establishments in industry	. 13	5.2	125.5	4.3	8.0	93.0	749.7	347.1	1 090.3	23.1
2068	Salted and roasted nuts and seeds: All establishments in industry	88	8.8	172.1	6.9	13.4	115.3	866.8	1 291.2	2 178.0	28.0

Note: For qualifications of data, see footnotes on table 1a.

Table 5b. Industry-Product Analysis—Value of Shipments and Primary Product Shipments and Specialization and Coverage Ratios for the Industry: 1987 and Earlier Census Years

[An establishment is assigned to an industry based on shipment values of products representing largest amount considered primary to an industry. Frequently, establishment shipments comprise mixtures of products assigned to an industry (primary), those considered primary to other industries (secondary), and receipts for activities such as merchandising or contract work. Columns A-D show this product pattern for an industry, and column E shows primary product specialization ratio. The extent to which an industry's primary products are shipped by establishments classified in and out of an industry is shown in columns F-H and coverage ratio is shown in column I. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and product group code		Value of shipments					Value of primary product shipments			
	Industry and census year	Total (million dollars)	Primary products (million dollars)	Secondary products (million dollars)	Miscel- laneous receipts (million dollars)	Primary product special- ization ratio col. B÷ col. B+C (percent)	Total made in all indus- tries (million dollars)	Made in this industry (million dollars)	Made in other indus- tries (million dollars)	Coverage ratio col. B÷ col. F (percent)
		А	В	С	D	E	F	G	н	1
2061	Raw cane sugar	1 239.4 1 113.9 704.0	1 221.0 1 089.1 698.7	(D) (D) -	(D) (D) 5.3	(D) (D) 100	1 223.0 1 091.2 707.6	1 221.0 1 089.1 698.7	(D) 2.1 8.9	(D) 99 99
2062	Cane sugar refining 1987 1982 1977	2 460.2 3 040.3 2 260.0	2 411.8 2 987.5 2 161.4	6.1 8.4 29.7	42.3 44.4 68.9	99+ 99+ 99	2 438.6 2 992.3 2 168.0	2 411.8 2 987.5 2 161.4	26.8 4.8 6.6	99 99 99+
2063	Beet sugar1987 1982 1977	1 831.5 1 515.8 1 181.6	1 812.1 1 499.2 1 147.6	8.5	19.4 16.5 25.5	100 100 99	1 831.7 1 506.3 1 160.4	1 812.1 1 499.2 1 147.6	19.6 7.0 12.8	99 99 99
2064	Candy and other confectionery products 1987	6 979.8	6 477.4	256.4	246.0	96	6 909.5	6 477.4	432.1	94
2066	Chocolate and cocoa products1987	3 181.4	2 909.2	222.1	50.1	93	3 196.1	2 909.2	286.8	91
2067	Chewing gum1987 1982 1977	1 090.3 915.3 566.6	(D) (D) 502.4	(D) (D) 45.6	(D) (D) 18.6	(D) (D) 92	868.7 817.2 649.3	(D) (D) 502.4	(D) (D) 146.9	(D) (D) 77
2068	Salted and roasted nuts and seeds	2 178.0	1 937.3	202.6	38.0	91	2 064.4	1 937.3	127.1	94

Table 6a-1. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendixes. For comparability of product classes and product codes between 1982 and 1987, see appendixes. For meaning of abbreviations and symbols, see introductory textl

		1987			1982		
1007		Number of Product shipments ¹			Number of Product shipme		ments ¹
1987 product	Product	companies with			companies with		
code		shipments of		Value	shipments of		Value
		\$100,000 or more	Quantity ²	(million dollars)	\$100,000 or more .	Quantity ²	(million dollars)
2061	RAW CANE SUGAR						
00040	Total	(NA)	(X)	1 223.0	(NA)	(X)	1 091.2
20610 20610 11	Sugar cane mill products and byproducts: Raw cane sugar	29	3 051.5	1 146.9	34	2 551.0	1 005.9
20610 65	Other sugar cane mill products and byproducts: Molasses and syrup, including cane blackstrap (except	23	0 001.0	1 140.5	04	2 331.0	1 000.0
	refiners' blackstrap)1,000 s tons	32	1 173.4	57.4	36	*1 223.9	47.0
20610 85	All other sugar cane mill products and byproducts, including sugar for consumer use without further		(0)			(0)	
20610 00	processing; bagasse; etcdo Raw cane sugar and byproducts, n.s.k., typically for establishments with 10 employees or more (see note)	(NA)	(S)	4.6	3 (NA)	(S)	10.9
20610 02	Raw cane sugar and byproducts, n.s.k., typically for establishments with less than 10 employees	(INA)	(X)	14.1	(NA)	(X)	21.4
	(see note)	-	(X)	-	(NA)	(X)	5.9
2062	CANE SUGAR REFINING			Ì			
	Total	(21.4)		0.400.0	(81.8)	200	0.000
20620	Total	(NA)	(X)	2 438.6	(NA)	(X)	2 992.3
20020	Refined cane sugar: Granulated cane sugar including cube and tablet sugar						
20620 09	Shipped in individual services (small paper packets)1,000 s tons	5	52.6	44.3	5	43.2	32.9
2 0 620 12	Shipped in consumer units (containers of 25 lb or less) do	10	1 480.3	808.2	10	1 343.6	670.5
20620 14	Shipped in commercial units (bags and other containers more than 25 lb)	6	1 287.2	479.1	9	2 389.2	958.4
20620 15 20620 31	Shipped in bulk (rail cars, trucks, or bins) do Confectioners' powdered sugar: Shipped in consumer units (containers of 10 lb or	6	1 238.1	580.2	10	1 175.2	506.2
	less)1,000 s	5	67.4	49.8	6	59.4	50.0
20620 35	Shipped in commercial units (containers of more than 10 lb)	6	176.4	97.9	9	288.7	155.9
20620 41	Soft or brown sugar: Shipped in consumer units (containers of 10 lb or less)						
20620 45	Shipped in commercial units (containers of more than	8	101.3	72.3	5	48.0	41.3
	liquid sugar or sugar syrup:	4	121.6	65.3	7	221.5	122.4
20620 53 20620 56	Sucrose type1,000 s tons sugar solids	6	353.4	168.2	10	569.3	249.0 185.9
20620 75	Other cane sugar refining products and byproducts, including refiners' blackstrap and syrup	4	63.9	33.7	°	342.6	100.8
20620 00	Refined cane sugar and byproducts, n.s.k., typically for	5	**76.9	26.9	8	148.6	11.7
20620 02	establishments with 5 employees or more (see note) Refined cane sugar and byproducts, n.s.k., typically for establishments with less than 5 employees (see note)	(NA)	(X)	12.6	(NA)	(X)	7.3
	establishments with less than 5 employees (see note)	-	(X)	-	(NA)	(X)	2.
2063	BEET SUGAR						
	Total	(NA)	(X)	1831.7	(NA)	(X)	1 506.3
20630	Refined beet sugar and byproducts:						
20630 07	Refined beet sugar: Granulated beet sugar, including cube and tablet sugar: Shipped in individual services (small paper packets)						
20030 07	and in consumer units (cartons and sacks of 25 lb or less)1,000 s						
20630 13	Shipped in commercial units (bags and other	7	309.7	159.8	8	442.5	213.3
20630 15	containers of more than 25 lb) do Shipped in bulk (rail cars, trucks, or bins) do	10 11	861.5 1 834.7	537.2 810.6	10 10	617.3 1 427.2	282.1 683.3
20630 33 2063 0 51	Confectioners' powdered sugar do Liquor sugar or sugar syrup: Sucrose type 1,000 s tons	7	110.6	60.8	7	72.5	36.0
20630 55	sugar solids	5 5	124.2 28.3	75.1 13.4	6	116.2 93.0	57.0 48.6
20630 75	Other beet sugar factory products and byproducts: Whole or straighthouse molasses						
20630 81 20630 82	Discard molasses	11 2 5	808.4 (D) 457.8	49.6 (D) 37.7	9 2	816.0 (D) 362.2	45.4 (D 37.5
20630 82 20630 84 20630 89	Molasses beet pulp, bulk do_ Molasses beet pulp, pelletized do_ All other beet pulp, including dried beet pulp do_	8 5	457.8 545.8 (D)	40.9 (D)	5 10 6	851.1 (D)	75. 75.
20630 00	Beet sugar products, n.s.k., typically for establishments with	(NA)	(D) (X)	2.9	(NA)	(X)	ن) .
20630 02	5 employees or more (see note) Beet sugar products, ns.k., typically for establishments with less than 5 employees (see note)	(14.7)	(X)	2.0	,	(X)	.,

Table 6a-1. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendixes. For comparability of product classes and product codes between 1982 and 1987, see appendixes. For meaning of abbreviations and symbols, see introductory text]

			1987		1982		
1987 product code	Product	Number of companies with shipments of \$100,000	Product ship	Walue (million	Number of companies with shipments of \$100,000	Product shipr	value
		or more	Quantity ²	dollars)	or more	Quantity ²	dollars
2064	CANDY AND OTHER CONFECTIONERY PRODUCTS ³						
20642	Total Chocolate and chocolate-type confectionery products made	(NA)	(X)	6 909.5	(NA)	(X)	4 730.0
20642 00	from purchased chocolate: Chocolate and chocolate-type confectionery products made from purchased chocolate, including bar goods, granola bars, package goods, specialties, bulk goods, count goods, molded confections, etc. (see also code 20662)						0.740
20643 20643 00	(for additional detail see table 6a-2)mil lb Nonchocolate-type products: Nonchocolate-type confectionery products, including bar goods, granola bars, package goods, specialties, bulk	150	1 909.2	4 082.0	155	1 444.5	2 719.0
	goods, count goods, etc. (for additional detail see table 6a-2)mil lb	165	1 991.6	2 296.7	171	*1 575.8	1 593.
20649	Other confectionery-type products	(NA)	(X)	110.4	(NA)	(X)	76.0
20649 21 20649 76 20649 00	Cough drops, except pharmaceutical typemil lb Glace, candied and crystallized fruits, fruit peels, nuts, and other vegetable substancesdo Other confectionery-type products, n.s.k	6 11 (NA)	13.7 63.5 (X)	52.1 52.5 5.8	- 12	65.8 (X)	76.
20640 —	Candy and other confectionery products, n.s.k	(NA)	(X)	420.8	(NA)	(×)	340.
20640 00	Candy and other confectionery products, n.s.k., typically for establishments with 5 employees or more (see note)	(NA)	(X)	197.4	(NA)	(×)	175.
20640 02	Candy and other confectionery products, n.s.k., typically for establishments with less than 5 employees (see note)	(NA)	(X)	223.4	(NA)	(X)	165.
2066	CHOCOLATE AND COCOA PRODUCTS4						
	Total	(NA)	(X)	3 196.1	(NA)	(X)	2 419
20661 — 20661 12	Chocolate coatings mil lb_ Sweet mil lb_ Milk do_	(NA)	(X) 83.5	583.6 91.6	(NA)	(X) 69.0	352. 60.
20661 22 20661 32 20661 52	Milk do- Liquor do- Confectionery (cocoa) coatings, including ice cream coating (made chiefly from cocoa powder and fat other than	14 12	290.7 59.3	304.1 89.0	9 8	114.0	146. 52.
20661 00	cocoa butter) do Chocolate coatings, n.s.k	17 (NA)	95.2 (X)	95.7 3.1	(NA)	151.3 (X)	91.
20662 — 20662 00	Chocolate and chocolate-type confectionery products made from cocoa beans ground in same establishment: Chocolate and chocolate-type confectionery products (made from cocoa beans ground in same establishment), including bar goods, granola bars, package goods, specialties, bulk goods, count goods, molded confections (see also code 20642) (for additional detail see table						
	6a-2)mil lb	11	705.8	1 260.5	10	495.9	1 040.
20669	Other chocolate and cocoa products ⁴ Chocolate, except coatings:	(NA)	(X)	1 243.3	(NA)	(X)	980.
20669 11 20669 21	Unsweetened mil lb Sweetened do do	7 14	*45.0 288.8	61.1 517.7	(NA) (NA)	9.9 289.9	23. 439.
20669 63	Cocoa, powdered: Unsweetenedmil lb	12	91.2	77.9	(NA)	127.0	120.
20669 71	Sweetened or mixed with other substances: In cans or packages of 2-1/2 lb or lessmil lb	11	110.4	146.3	(NA)	148.8	199
20669 75 20669 81	In other containers and bulk (barrels, drums, bags)do Cocoa butterdo Chocolate syrups: Chocolate liquor base:	17 6	140.9 26.5	114.7 57.1	(NA)	35.0 **9.3	25. 21.
20669 92 20669 93	In cans or packages of 16 oz or lessmil lb_ In other containers and in bulkdo	9	50.4	33.6 171.0	- (NA)	148.5	109.
20669 95 20669 00	Cocoa powder base do Chocolate and cocoa products, except confectionery,	19	(S) 85.4	54.5	(NA)	70.5	30.
20009 00	n.s.k.	(NA)	(X)	9.4	(NA)	(X)	11.
20660 20660 00	Chocolate and cocoa products, n.s.kChocolate and cocoa products, n.s.k., typically for	(NA)	(X)	108.6	(NA)	(X)	46.
20660 02	establishments with 10 employees or more (see note) Chocolate and cocoa products, n.s.k., typically for establishments with less than 10 employees (see note)	(NA)	(X) (X)	14.9 93.7	(NA)	(X) (X)	26. 19.
2067	CHEWING GUM	,	(1.4)	, , , ,	(4	. ,	
	Total	(NA)	(X)	868.7	(NA)	(X)	817.
20670 — 20670 11	Chewing gum and chewing gum base: Chewing gum, not medicated: Containing sugarmil lb	9	208.8	499.1			
20670 14 20670 15	Not containing sugar	5 4	(D)	499.1 (D) (D)	9	395.6	739. (F
20670 00	Chewing gum, n.s.k., typically for establishments with 5 employees or more (see note)	4	(D)	(D)	(NA)	(D) (X)	(E (E
	Chewing gum, n.s.k., typically for establishments with less	-	(X)	-	(IVA)	(^)	(L

Table 6a-1. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1987 and 1982-Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendixes. For comparability of product classes and product codes between 1982 and 1987, see appendixes. For meaning of abbreviations and symbols, see introductory text]

			1987		1982		
1987	Product	Number of companies	Product shipments ¹		Number of companies	Product shipments ¹	
product code		shipments of \$100,000 or more	Quantity ²	Value (million dollars)	with shipments of \$100,000 or more	Quantity ²	Value (million dollars)
2068	NUTS AND SEEDS						
	Total	(NA)	(X)	2 064.4	(NA)	(X)	1 494.3
20680	Nuts and seeds (salted, roasted, cooked, or blanched): Sold in bulk:						
20680 13 20680 15 20680 17	Peanuts, shipped separately mil lb Mixed nuts, including 4 varieties or more do Other nuts, shipped separately or with 3 varieties or	30 10	386.8 4.5	296.6 13.1	29 11	383.1 8.2	232.2 10.2
	less do	27	186.6	303.6	31	152.7	223.3
20680 33 20680 35 20680 37	Peanuts, shipped separately mil lb	18 16 14	46.3 19.9 34.5	123.5 49.7 123.8	19 20 25	177.6 43.5 *53.3	222.0 97.9 116.5
20680 53 20680 55 20680 57	Peanuts, shipped separatelymil lb Mixed nuts, including 4 varieties or moredo Other nuts, packaged separately or with 3 varieties or	22 19	189.3 33.5	277.3 62.9	25 19	145.4 19.2	214.6 45.3
20680 61 20680 00	less do_ Seeds (sunflower, pumpkin, etc.) do_ Needs (sunflower, pumpkin, etc.)	27 23	326.6 142.9	703.4 66.9	33 14	133.5 106.2	266.4 52.7
20680 00	Nuts and seeds, n.s.k., typically for establishments with 10 employees or more (see note) Nuts and seeds, n.s.k., typically for establishments with	(NA)	(X)	32.4	(NA)	(X)	13.3
-3000 UZ	less than 10 employees (see note)	(NA)	(X)	11.3	(NA)	(X)	-

Note: In 1987 Census of Manufactures, data for establishments of small single unit companies with up to 20 employees were estimated from administrative-records data rather than data actually collected from respondents. Employment cutoffs used for administrative records for each industry and shipments figures are included in code ending with "002". In both 1987 and 1982 Censuses of Manufactures, products not completely identified on standard forms were coded in appropriate product class (five-digit) followed by "00" or to appropriate product group code (four-digit) followed by "000".

Table 6a-2. Related Products From Current Industrial Reports Series—Value of Shipments by All Producers: 1987 and 1982

[Additional detail is provided in the Current Industrial Report series. For meaning of abbreviations and symbols, see introductory text]

1987		1987 product sh	ipments	1982 product shipments		
product code	Product	Quantity	Value (million dollars)	Quantity	Value (million dollars)	
	MA20D, CONFECTIONERY					
20642 —	Chocolate and chocolate-type confectionery ¹ mil b	2 353.8	5 285.2	2 049.9	3 798.5	
20642 11 20642 21	Solid	275.4 254.7	623.2 649.1	230.1 171.6	452.4 403.1	
20642 31 20642 32	With candy, fruit, or nut centermil lb With bakery product center do	1 108.3 150.6	2 376.9 309.8	970.3 114.6	1 693.9 227.0	
20642 41	Panned do	412.9	859.7	364.2	636.4	
20642 51 20642 00	Assortments and otherdo Chocolate type, n.s.kdo	140.1 11.8	441.0 25.6	188.7 10.4	366.5 19.2	
20643 —	Nonchocolate-type confectionerymil lb	1 736.1	2 142.3	1 572.8	1 591.0	
20643 11 20643 21	Hard candy do Chewy candy (including granola bars) do	592.1 304.3	800.2 · 461.8	497.8 275.9	612.3 265.7	
20643 31	Soft candy do	329.7	277.2	443.4	346.6	
20643 41	Iced coated do	41.6	63.5	21.7	29.0	
20643 51 20643 61	Panneddo	315.2	369.2	242.2 78.7	256.7 67.4	
20643 00	Liconice and liconice-type do Nonchocolate type, n.s.k do	134.2	146.8 23.6	13.0	13.2	

¹Compares to the sum of products 20642 00 and 20662 00 in table 6a-1.

¹Data reported by all producers, not just those with shipments of \$100,000 or more.
²For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).
³Industry 2064 was newly defined for 1987. Product categories 20642, 20643, 20649, and 20640 are identical to prior product categories 20652, 20659, and 20650 respectively.
⁴Industry 2066 was revised for 1987. New product category 20669 is composed of old product categories 20668 and 20998.
⁵Industry 2068 was newly defined for 1987. It is equivalent to product category 20657 in prior years.

Table 6a-3. Selected Products Primary to More Than One Industry—Quantity and Value of Shipments by Industry: 1987 and 1982

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) also are included. For further explanation, see Value Shipments in appendixes. For comparability of product classes and product codes between 1982 and 1987, see appendixes. For meaning of abbreviations and symbols, see introductory text]

1987			1987		1982		
		Number of	Product st	nipments ¹	Number of	Product s	hipments1
product code	Product	companies with shipments of \$100,000 or more	Quantity ²	Value (million dollars)	with shipments of \$100,000 or more	shipments of \$100,000	Value (million dollars)
20642 20662	Chocolate and chocolate-type confectionery productsmil lb Made from purchased chocolatedo Made from chocolate manufacturesdo	(NA) 150 11	2 615.0 1 909.2 705.8	5 342.5 4 082.0 1 260.5	(NA) 155 10	1 960.4 1 444.5 495.9	3 759.7 2 719.6 1 040.1

Data reported by all producers, not just those with shipments of \$100,000 or more.

2For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

Table 6b. Product Classes—Value of Shipments by All Producers for Specified States: 1987 and 1982

[Million dollars. Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in table 2. Also, product classes are not shown if they are miscellaneous or "not specified by type" classes. Statistics for some States are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1987. For meaning of abbreviations and symbols, see introductory text. For comparability of product classes and product codes between 1982 and 1987 and explanation of terms, see appendixes]

Product class and geographic area	1987 value of product shipments	1982 value of product shipments	Product class and geographic area	1987 value of product shipments	1982 value of product shipments
20642, CHOCOLATE AND CHOCOLATE-TYPE CONFECTIONERY PRODUCTS MADE FROM PURCHASED CHOCOLATE ¹			20643, NONCHOCOLATE-TYPE CONFECTIONERY PRODUCTS¹—Con. Tennessee	83.9	42.7
United States	4 082.0	2 719.6	TexasUtahWashington	162.1 9.8 27.4	78.1 (NA) (NA)
California	180.6 13.6	126.5 11.9	20649, OTHER CONFECTIONERY-TYPE PRODUCTS ¹		
Hawaii	44.6	18.8	United States	110.4	76.6
IllinoisMaryland	1 027.4 2.6	656.2 (NA)	California	5.9	(NA)
			20661, CHOCOLATE COATINGS		
Massachusetts	65.8 14.0	113.9 10.3	United States	583.6	352.7
New York	63.9	60.2			
Ohio	70.0	47.0	California	56.0 111.4	54.3 62.5
Pennsylvania	896.1	502.8	Pennsylvania	219.2	126.4
20643, NONCHOCOLATE-TYPE CONFECTIONERY PRODUCTS ¹			20662, CHOCOLATE AND CHOCOLATE-TYPE CONFECTIONERY PRODUCTS MADE FROM COCOA BEANS GROUND IN SAME ESTABLISHMENT (ALSO SEE CODE 20642)		
United States	2 296.7	1 593.7	United States	1 260.5	1 040.1
CaliforniaConnecticut	150.5 9.4	114.0 (NA)	CaliforniaPennsylvania	269.9 718.5	(NA) 622.9
Georgia	63.5 725.5 66.1	52.ó 486.0 63.2	20669, OTHER CHOCOLATE AND COCOA PRODUCTS ²		
			United States	1 243.3	980.8
Minnesota	68.3	(NA)	California	172.7	138.0
New Jersey	42.4	29.8	Illinois	61.0	(NA)
New York	177.7	107.4	New Jersey	118.8 155.5	(NA) (NA)
OhioPennsylvania	42.0 207.1	(NA) 124.7	New York	155.5	(NA)
	207.1	12-7.7			(1.17)

¹See footnote 3, table 6a-1. ²See footnote 4, table 6a-1.

Table 6c. Historical Statistics for Product Classes-Value Shipped by All Producers: 1987 and Earlier Years

[Million dollars. For meaning of abbreviations and symbols, see introductory text. For comparability of product classes and product codes between 1982 and 1987 and explanation of terms, see appendixes]

1987 product code	Product class	1987	19861	19851	19841	19831	1982	1977	1972
2061-	Raw cane sugar	1 223.0	1 226.5	1 151.0	1 20 2. 6	1 283.8	1 091.2	707.6	419.5
20610		1 223.0	1 226.5	1 151.0	1 202.6	1 283.8	1 091.2	707.6	419.5
2062-	Cane sugar refining	2 438.6	2 591.6	2 574.2	3 00 3.8	3 049.2	2 992.3	2 168.0	1 746.4
20620		2 438.6	2 591.6	2 574.2	3 003.8	3 049.2	2 992.3	2 168.0	1 746.4
2063-	Beet sugar Refined beet sugar and byproducts	1 831.7	1 749.8	1 680.9	1 721.5	1 472.7	1 506.3	1 160.4	866.4
20630		1 831.7	1 749.8	1 680.9	1 721.5	1 472.7	1 506.3	1 160.4	866.4
2064- 20642 20643 20649 20640	Candy and other confectionery products ² Chocolate and chocolate-type confectionery products made from purchased chocolate Nonchocolate-type confectionery products Other confectionery-type products Candy and other confectionery products, n.s.k.	6 909.5 4 082.0 2 296.7 110.4 420.8	6 415.5 3 577.3 2 401.6 86.1 350.5	6 186.4 3 453.4 2 294.2 91.9 346.9	5 742. 8 3 16 4.4 2 060.4 83.1 434.9	5 127.7 2 878.8 1 870.8 54.9 323.2	4 730.8 2 719.6 1 593.7 76.6 340.9	(NA) 1 709.3 1 241.7 (NA) 215.2	(NA) 1 704.3 (NA) 103.7
2066- 20661 20662 20669 20660	Chocolate and cocoa products³	3 196.1 583.6 1 260.5 1 243.3 108.6	2 996.0 605.7 1 380.7 954.9 54.7	3 011.2 536.2 1 350.6 1 077.6 46.8	2 812.5 508.2 1 300.9 899.2 104.2	2 493.1 362.8 1 315.0 770.4 44.9	2 419.6 352.7 1 040.1 980.8 46.0	(NA) 340.9 565.4 (NA) 16.4	(NA) 167.0 288.7 (NA) 5.8
20 67-	Chewing gumChewing gum base	8 6 8.7	1 040.6	92 5. 8	899 .2	86 4.4	8 17.2	649.3	38 4. 8
20670		868.7	1 040.6	925.8	899.2	864.4	817.2	649.3	384.8
20 68-	Nuts and seeds4	2 064.4	1 563.5	1 401.7	1 420. 6	1 499.3	1 494.3	(NA)	(NA)
20680	Nuts and seeds (salted, roasted, cooked, or blanched)	2 064.4	1 563.5	1 401.7	1 420.6	1 499.3	1 494.3	(NA)	(NA)

¹Figures are estimates derived from a representative sample of manufacturing establishments. Standard errors associated with estimates are published in annual survey of manufactures publications for this period.

²See footnote 3, table 6a-1.
³See footnote 4, table 6a-1.
³See footnote 5, table 6a-1.

Table 7. Materials Consumed by Kind: 1987 and 1982

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendixes. For meaning of abbreviations and symbols, see introductory text]

1987		1987		1982	
material code	Material	Quantity ¹	Delivered cost (million dollars)	Quantity ¹	Delivered cost (million dollars)
	INDUSTRY 2061, RAW CANE SUGAR				
	Materials, containers, and supplies	(X)	750.8	(X)	70 9.7
013321 9 70 099 9 7 1000	Sugar cane1,000 s tons	23 107.7 (X) (X)	644.1 94.7 12.0	*23 990.8 (X) (X)	629.0 59.8 20.9
	INDUSTRY 2062, CANE SUGAR REFINING				
	Materials, containers, and supplies	(X)	1 951.2	(X) ·	2 274.8
206101 260091	Raw cane sugar (converted to 96 degree basis) 1,000 s tons Paper and paperboard containers, including shipping sacks	4 361.7	1 755.4	5 743.2	2 067.5
970099 971000	and other packaging supplies	(X) (X) (X)	73.7 118.7 3.4	(X) (X) (X)	71.6 130.8 4.9
	INDUSTRY 2063, BEET SUGAR				
	Materials, containers, and supplies	(X)	1 138.5	(X)	9 0 8.6
013311 260091	Sugar beets 1,000 s tons Paper and paperboard containers, including shipping sacks	*25 843.1	961.3	*25 687.0	789.0
970099 971000	and other packaging supplies All other materials, containers, and supplies Materials, containers, and supplies, n.s.k.2	(X) (X) (X)	52.0 122.3 2.9	(X) (X) (X)	18.1 101.2 .3

See footnotes at end of table.

Table 7. Materials Consumed by Kind: 1987 and 1982—Con.

[includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendixes. For meaning of abbreviations and symbols, see introductory text]

1987 material code		198	37	1982			
material	Material	Quantity ¹	Delivered cost (million dollars)	Quantity ¹	Delivered cost (million dollars)		
	INDUSTRY 2064, CANDY AND OTHER CONFECTIONERY PRODUCTS						
	Materials, ingredients, containers, and supplies	(X)	2 879.9	(NA)	(NA)		
206602 206604	Chocolate coatings1,000 s tons Cocoa powder composition coatings do	143.7 8.1	240.9 7.2	(NA) (NA)	(NA) (NA) (NA)		
206606 206608 206691	Unsweetened chocolate (chocolate liquor) do Cocoa, pressed cake and powder do Cocoa butter mil lb	47.2 11.3 90.5	115.1 15.9 201.0	(NA) (NA) (NA)	(NA) (NA) (NA)		
204604 204611 204612	Sweeteners: High fructose corn syrup in terms of solids mil lb Crystalline fructose (dry fructose) do Dextrose and corn syrup, including corn syrup solids in	**80.8 *19.3	7.7 5.1	(NA) (NA)	(NA) (NA)		
286932 206011	terms of dry weight do- Sugar substitutes (mannitol, sorbitol, etc.) do- Sugar (cane and beet) in terms of sugar solids	906.8 25.6 834.6	85.8 10.0 393.5	(NA) (NA) (NA)	(NA) (NA) (NA)		
010012 206583 190045	Nuts, in shell (including peanuts) mil lb. Nutmeats, including peanuts (purchased as such) do- Fresh and dried fruits do-	80.8 252.6 59.3	61.3 223.5 60.9	(NA) (NA) (NA)	(NA) (NA) (NA)		
202000 207007	Fats and oils (including shortening)	(X) 81.1	165.5 34.1	(NA) (NA)	(NA) (NA)		
286953 190003	Essential oils and flavors	(X) (X)	41.8 221.3	(NA) (NA)	(NA) (NA)		
265001 341101	Containers: Paperboard containers, boxes, and corrugated paper Metal cans	(X) (X)	285.1 12.5	(NA) (NA)	(NA) (NA)		
322101 970099 971000	Glass containers	**58\$.6 (X) (X)	17.7 416.8 257.2	(NA) (NA) (NA)	(NA) (NA) (NA)		
	INDUSTRY 2066, CHOCOLATE AND COCOA PRODUCTS						
	Materials, ingredients, containers, and supplies	(X)	1 599.0	(NA)	(NA)		
017915 206602	Cocoa beans 1,000 s tons Chocolate coatings do	244.4 14.2	438.6 21.2	(NA) (NA)	(NA) (NA)		
206604 206606 206608	Cocca powder composition coatings do Unsweetened chocolate (chocolate liquor) do Cocca, pressed cake and powder do do	(D) 53.5 11.3	(D) 96.8 11.8	(NA) (NA) (NA)	(NA) (NA) (NA)		
206691	Cocoa buttermil lb	94.1	207.5	(NA)	(NA)		
204604 204612	Sweeteners: High fructose corn syrup in terms of solidsmil lb Dextrose and corn syrup, including corn syrup solids in	*54.9	5.3	(NA)	(NA)		
206011	terms of dry weight do_ Sugar (cane and beet) in terms of sugar solids 1,000 s tons_	61.4 355.7	6.1 159.9	(NA) (NA)	(NA) (NA)		
010012 206583 202000	Nuts, in shells, including peanuts mil lb_ Nutmeats, including peanuts (purchased as such) do_ Milk and milk products	(D) 40.2 (X)	(D) 60.9 160.2	(NA) (NA) (NA)	(NA) (NA) (NA)		
207007 286953	Fats and oils, including shorteningmil lb Essential oils and flavors	*91.1 (X)	35.5 6.9	(NA) (NA)	(NA) (NA)		
190003 265001 970099	Flexible packaging materials Paperboard containers, boxes, and corrugated paperboard All other materials, ingredients, containers, and supplies	(X) (X) (X)	66.8 47.2 207.8	(NA) (NA) (NA)	(NA) (NA) (NA)		
971000	Materials, ingredients, containers, and supplies, n.ś.k.²	(×)	58.0	(NA)	(NA)		
	INDUSTRY 2067, CHEWING GUM						
	Materials, ingredients, containers and supplies	(X)	300.5	(X)	287.8		
206701	Chewing gurn base, including chicle	(X)	81.2	(X)	(D)		
204604 204612	Sweeteners: High fructose corn syrup in terms of solidsmil lb Dextrose and corn syrup, including corn syrup solids in	(D)	(D)	(D)	(D)		
286932	terms of dry weightdo Sugar substitutes (mannitol, sorbitol, etc.)do Sugar (cane and beet) in terms of sugar solids1,000 s tons	77.0 (D)	9.9 (D)	85.9 (D)	16.2 (D) 35.1		
206011 286953 190003	Essential oil and flavors Flexible packaging materials	99.6 ((X) (X)	35.8 19.2 57.1	*86.2 (X) (X) (X) (X)	(D) 53.7		
265001 970099 971000	Paperboard containers, boxes, and corrugated paperboard All other materials, ingredients, containers, and supplies Materials, ingredients, containers, and supplies, n.s.k.²	(X) (X) (X) (X)	22.9 55.5 .4	(X) (X) (X)	19.7 43.0 3.1		
	r waterials, ingredients, containers, and supplies, n.s.k.*	(x) :	.4	(^) 1	5.1		

See footnotes at end of table.

Table 7. Materials Consumed by Kind: 1987 and 1982—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendixes. For meaning of abbreviations and symbols, see introductory text]

1007		19	87	19	982
010012 N 206583 N 207007 F 190003 FI	Material	Quantity ¹	Delivered cost (million dollars)	Quantity ¹	Delivered cost (million dollars)
	INDUSTRY 2068, SALTED AND ROASTED NUTS AND SEEDS				
	Materials, ingredients, containers, and supplies	(X)	1 245.0	(NA)	(NA)
206583 207007	Nuts, in shell (including peanuts) mil lb. Nutmeats, including peanuts (purchased as such) do- Fats and oils (including shortening) do- Flexible packaging materials	844.8 632.6 (S) (X)	458.9 502.6 8.2 35.5	(NA) (NA) (NA) (NA)	(NA) (NA) (NA) (NA)
265001 341101 322101 970099 971000	Containers: Paperboard containers, boxes, and corrugated paperboard	(X) (X) ••927.7 (X) (X)	24.7 26.7 18.3 151.4 18.7	(NA) (NA) (NA) (NA) (NA)	(NA) (NA) (NA) (NA) (NA)

¹For some establishments, data have been estimated from central unit values which are based on quantity-cost relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

²Total cost of materials of establishments that did not report detailed materials data, including establishments that were not mailed a form.

APPENDIX A. Explanation of Terms

This appendix is in two sections. Section 1 includes items requested of all establishments mailed census of manufactures forms including annual survey of manufactures (ASM) forms. Note that this section also includes several items (number of establishments and companies, value added, classes of products, and specialization and coverage ratios) not included on the report forms but derived from information collected on the forms. Section 2 covers supplementary items requested only from establishments included in the ASM sample. Results of the supplementary ASM inquiries are included in table 3c of this report.

SECTION 1. ITEMS COLLECTED OR DERIVED BASED ON ALL CENSUS OF MANUFACTURES (INCLUDING ASM) REPORT FORMS

Number of establishments and companies—As discussed in the Introduction, a separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operated at different physical locations, even if the individual locations were producing the same line of goods, a separate report was requested for each location. If the company operated in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on any employees, capital expenditures, inventories, or shipments from inventories during the year.

In this report, data are shown for establishments in operation at any time during the year. A comparison with the number of establishments in operation at the end of the year will be provided in the Introduction of the General Summary subject report.

Employment and related items—The report forms requested separate information on production workers for a specific payroll period within each quarter of the year and on other employees as of the payroll period which included the 12th of March.

All employees—This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period which included the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods.

Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production workers—This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All other employees—This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It includes sales (including driver salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office function, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment engaged in the construction of major additions or alterations to the plant and utilized as a separate work force.

In addition to reports sent to operating manufacturing establishments, information on employment during the payroll period which included March 12 and annual payrolls also was requested of auxiliary units (e.g., administrative offices, warehouses, and research and development laboratories) of multiestablishment companies. However, these figures are not included in the totals for individual

industries shown in this report. They are included in the general summary and geographic area reports as a separate category.

Payroll—This item includes the gross earnings of all employees on the payroll of operating manufacturing establishments paid in the calendar year 1987. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers of corporations; it excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payroll of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' Social Security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' supplemental labor costs, both those required by Federal and State laws and those incurred voluntarily or as part of collective bargaining agreements. (Supplemental labor costs are explained later in this appendix.)

As in the case of employment figures, the payrolls of separate auxiliary units of multiestablishment companies are not included in the totals for individual industries or industry groups.

Production-worker hours—This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

Cost of materials—This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (1) all raw materials, semifinished goods, parts, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year, (2) electric energy purchased, (3) fuels consumed for heat, power, or the generation of electricity, (4) work done by

others on materials or parts furnished by manufacturing establishments (contract work), and (5) products bought and resold in the same condition. (See discussion of duplication of data below.)

Specific materials consumed—In addition to the total cost of materials, which every establishment was required to report, information also was collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information on the establishments consuming less than a specified amount (usually \$10,000) of a specific material were not requested to report consumption of that material separately. Also, the cost of materials for the small establishments for which either administrative records or short forms were used was imputed as "not specified by kind." (See the introduction for the importance of administrative records in the industry.)

Value of shipments—This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and resold without further processing. Included are all items made by or for the establishments from materials owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of "all other costs" (including company overhead) and profit. (See discussion of duplication of data below.)

Individual products—As in previous censuses, data were collected for most industries on the quantity and value of individual products shipped. In the 1987 census program, information was collected on the output of approximately 11,000 individual product items. The term "product", as used in the census of manufactures, represents the finest level of detail for which output information was requested. Consequently, it is not necessarily synonymous with the term "product" as used in the marketing sense. In some cases, it may be much more detailed and, in other cases, it is more aggregative. For example, "pharmaceutical preparations" was distributed into over 100 terms; whereas, "motor gasoline" was reported as a single item.

Approximately 6,600 of the product items were listed separately on the 1987 census report forms. Data for

about 4,400 products were obtained in the monthly, quarterly, or annual surveys comprising the Current Industrial Reports series of the Census Bureau. Totals for the year 1987 for these items, as derived from the commodity surveys, are shown in the "products shipped" table (table 6a-2).

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1982 information is presented for most products.

Typically, both quantity and value of shipments information were collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers also was collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant was collected. Typically, the information on production also was collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

Classes of products—To summarize the product information, the separate products were aggregated into classes of products that, in turn, were grouped into all primary products of each industry. The code structure used is a seven-digit number for the individual product, a five-digit number for the class of product, and a four-digit number for the total primary products in an industry. (See Introduction, Industry Classification of Establishments, for application of the coding structure to the assignment of SIC codes for establishments.)

In the 1987 census, the 11,000 products were grouped into approximately 1,500 separate classes on the basis of general similarity of manufacturing processes, types of materials used, and the like. However, the grouping of products was affected by the economic significance of the class and, in some cases, dissimilar products were grouped because the products were not sufficiently significant to warrant separate classes.

Duplication in cost of materials and value of shipments— The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication since the products of some industries are used as materials by others. This duplication results, in part, from the addition of related industries representing successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the food group and the addition of pulp mills to paper mills in the paper and allied products group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the annual survey.

Duplication of products within individual industries is significant within a number of industry groups, e.g., machinery and transportation industries. These industries frequently include complete machinery and their parts. In this case, the parts made for original equipment are materials consumed for assembly plants in the same industry.

Even when no significant amount of duplication is involved, value of shipments figures are deficient as measures of the relative economic importance of individual manufacturing industries or geographic areas because of the wide variation in ratio of materials, labor, and other processing costs of value of shipments, both among industries and within the same industry.

Before 1962, cost of materials and value of shipments were not published for some industries which included considerable duplication. Since then, these data have been published for all industries at the United States level and beginning in 1964, for all geographic levels.

Value added by manufacture—This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning- and end-of-year inventories.

For those industries where value of production is collected instead of value of shipments (see footnote in table 1a), value added is adjusted only for the change in work-in-process inventories between the beginning and end of year. For those industries where value of work done is collected, the value added does not include an adjustment for the change in finished goods or work-in-process inventories.

"Value added" avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

New and used capital expenditures—For establishments in operation and any known plants under construction, manufacturers were asked to report their new expenditures for (1) permanent additions and major alterations to

manufacturing establishments, and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

The totals for new expenditures include expenditures leased from nonmanufacturing concerns through capital leases, new facilities owned by the Federal Government but operated under contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Also excluded are expenditures for used plant and equipment (although reported in the census), expenditures for land, and cost of maintenance and repairs charged as current operating expenses.

Manufacturers also were requested to report the value of all used buildings and equipment purchased during the year at the purchase price. For any equipment or structure transferred for the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. Furthermore, if the establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported under used capital expenditures.

Total expenditures for used plant and equipment is a universe figure; it is collected on all census forms. However, the breakdown of this figure between expenditures for used buildings and other structures and expenditures for used machinery and equipment is collected only on the ASM form. The data for total new capital expenditures, new building expenditures, and new machinery expenditures, as well as the data for total used expenditures, are shown in table 3b.

End-of-year inventories—Respondents were asked to report their 1986 and 1987 end-of-year inventories at cost or market. Effective with the 1982 Economic Censuses, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). In 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Because of this change in reporting instructions, the 1982 through 1987 data for inventories and value added by manufacture included in the tables of this report are not comparable to the prior-year data shown in table 1a of this report and in historical census of manufactures and annual survey of manufactures publications.

In using inventory data by stage of fabrication for "all industries" and at the two-digit industry level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by another establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for individual industries, industry groups, and "all manufacturing", which are aggregates of figures reported by establishments in specified industries.

Specialization and coverage ratios—These items are not collected on the report forms but are derived from the data shown in table 5b. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

As noted in the introduction, an establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in tables 1a through 5a and data on product shipments shown in tables 6a through 6c.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

SECTION 2. ITEMS COLLECTED ONLY ON ASM REPORT FORMS

The following items were collected only from establishments included in the ASM sample:

 Supplemental labor costs—Supplemental labor costs are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans.

They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees. While the excluded items do benefit employees and all or part of their cost generally is similar to the items covered in the ASM labor costs statistics, accounting records generally do not provide reliable figures on net employee benefits of these types.

- 2. Retirements of depreciable assets—Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during 1987. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent also was requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.
- 3. Depreciation charges for fixed assets—This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.
- 4. Rental payments—Total rental payments is collected on all census forms. However, the breakdown between rental payments for buildings and other structures and rental payments for machinery and equipment is collected only on the ASM forms. This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets, and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

5. **Depreciable assets—**Total value of gross depreciable assets is collected on all census forms.

However, the detail for depreciable assets is collected only on the ASM forms. The data encompass all fixed depreciable assets on the books of establishments at the beginning and end of the year. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are nondepreciable capital assets, including inventories and intangible assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year, rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress. In addition, respondents were requested to make certain that assets at the beginning of the year plus new and used capital expenditures, less retirements, equalled assets at the end of the year.

- 6. New and used capital expenditures—The data for total new capital expenditures, new building expenditures, new machinery expenditures, and total used capital expenditures are collected on all census forms. However, the breakdown between expenditures for used buildings and other structures and expenditures for used machinery and equipment is collected only on the ASM form. (See further explanation on capital expenditures in section 1.)
- 7. Quantity of electric energy consumed for heat and power—Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy were collected only on the ASM forms. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.
- 8. Breakdown of new capital expenditures for machinery and equipment—ASM establishments were requested to separate their capital expenditures for new machinery and equipment into (1) automobiles, trucks, etc., for highway use, (2) computers and peripheral data processing equipment, and (3) all other.

The category "automobiles, trucks, etc., for highway use" is intended to measure expenditures for vehicles designed for highway use that were acquired through a purchase or lease-purchase agreement. Vehicles normally operating off public highways (vehicles specifically designed to transport materials, property, or equipment on mining, construction, logging, and petroleum development projects) are excluded from this item.

- 9. Foreign content of cost of materials—Establishments included in the ASM sample panel were requested to provide information on foreign-made materials purchased or transferred from foreign sources. This includes materials acquired from a central warehouse or other domestic establishment of the same company but made in an operation outside of the 50 States, District of Columbia, Puerto Rico, or U.S. territories.
- 10. Cost of purchased services—ASM establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, and communication services. Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment, such as painting, roof repairs, replacing parts, and overhauling equipment. Such payments made to other establishments of the same company and for repair and maintenance of any leased property also are included. Extensive repairs or reconstruction that were capitalized are considered capital expenditures for used buildings and machinery and are, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force also are excluded.

Three basic approaches were utilized to produce these statistics.

1. For items 1 through 6, data were estimated (imputed) for all non-ASM establishments using the available data in the establishment record and industrybased parameters. The statistics were then generated by simply tabulating all census records including the imputed value for non-ASM establishments and the unweighted value for ASM establishments. Separate imputation rates were developed and are shown in the table. For quantity of purchased electricity for heat and power (item 7), a similar procedure was used; however, the imputation parameters were geographically-based instead of industrybased. For quantities of generated less sold electricity, no imputation was performed for non-ASM establishments. The estimates for these items are simply tabulations of unweighted ASM values.

Since the published statistics for these items were developed from the complete census universe and not just the ASM establishments, there are no sampling variances associated with these statistics. However, there is an unknown level of bias for each of the items due to the imputation of the non-ASM establishments. This bias is felt to be small due to the strong correlation between the items being imputed and the collected items that were used to generate the impute values.

2. For items 8 and 9, the estimates were developed using a ratio estimation methodology. For item 8, an estimate of the breakout of new capital expenditures for machinery and equipment into the three categories was made from ASM establishments reporting these categories. The estimated proportions were then applied to the corresponding Census value for new capital expenditures for machinery and equipment to produce the estimates.

The estimates for item 9, foreign content of cost of materials, were developed in a similar manner based on costs of parts, supplies, and components (item 5a) as the control total for the three categories.

For items 8 and 9, an adjustment ratio of the following form was computed.

$$Rj = \frac{NMc}{TMEasm}$$

where:

NMc = the census value of new capital expenditures for machinery and equipment

TMEasm = the weighted ASM value of new capital expenditures for machinery and equipment from reporters of the detailed breakout data

3. For item 10, cost of purchased services, the estimates were made by simply tabulating weighted data for all the ASM records that reported the item. A response coverage ratio (a measure of the extent to which respondents reported for each item) is shown in table 3c for the three types of services. It is derived for each item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight, see appendix B) for those ASM establishments that reported the specific inquiry to the weighted total employment for all ASM establishments classified in the industry.

APPENDIX B.

Annual Survey of Manufactures (ASM) Sampling and Estimating Methodologies

DESCRIPTION OF SURVEY SAMPLE

The Annual Survey of Manufactures (ASM) contains two components. The mail portion of the survey is a probability sample of about 56,000 manufacturing establishments selected from a total of about 220,000 establishments. These 220,000 establishments represent all manufacturing establishments of multiunit companies and all single establishment companies mailed schedules in the 1982 Census of Manufactures. This mail portion is supplemented annually by a Social Security Administration list of new manufacturing establishments opened after 1982 and a list of new multiunit manufacturing establishments identified from the Census Bureau's Company Organization Survey.

The 1984 through 1988 ASM sample differs slightly from the previous sample. For the current panel, all establishments of companies with 1982 shipments in manufacturing in excess of \$500 million were included in the survey panel with certainty. There are approximately 500 such companies collectively accounting for approximately 18,000 establishments. For the remaining portion of the mail survey, the establishment was defined as the sampling unit. For this portion, all establishments with 250 employees or more and establishments with a very large value of shipments also were included in the survey panel with certainty. A total of 12,100 establishments were selected from this portion of the universe with certainty. Therefore, of the 56,000 manufacturing establishments included in the ASM panel, approximately 31,000 are selected with certainty. These certainty establishments collectively account for approximately 80 percent of the total value of shipments in the 1982 census.

Smaller establishments in the remaining portion of the mail survey were sampled with probabilities ranging from 0.999 to 0.005 in accordance with mathematical theory for optimum allocation of a sample. The probabilities of selection assigned to the smaller establishments were proportional to measures of size determined for each establishment. The measures of size depend directly upon each establishment's 1982 product class values and the historic variability of the year-to-year shipments of each product class. Product classes displaying more volatile year-to-year change in shipments at the establishment level were sampled at a heavier rate.

This method of assigning measures of size was used in order to maximize the precision (that is, minimize the variance of estimates of the year-to-year change) in the value of product class shipments. Implicitly, it also gave weight differences in employment, value added, and other

general statistics, since these are highly correlated with value of shipments. Individual sample selection probabilities were obtained by multiplying each establishment's final measure of size by an overall sampling fraction coefficient calculated to yield a total expected sample size.

The sample selection procedure gave each establishment in the sampling frame an independent chance of selection. This method of independent selection permits the rotation of small establishments out of a given sample panel without introducing a bias into the survey estimates.

The nonmail portion of the survey includes all singleestablishment companies that were tabulated as administrative records in the 1982 Census of Manufactures. Although this portion contained approximately 130,000 establishments, it accounted for less than 2 percent of the estimate for total value of shipments at the total manufacturing level. This portion was not sampled; rather, the data for every establishment in this group were estimated based on selected information obtained annually from the administrative records of the Internal Revenue Service and the Social Security Administration. This administrative-record information, which includes payroll, total employment, industry classification, and physical location of the establishment, was obtained under conditions which safeguard the confidentiality of both tax and census records. Estimates of data other than payroll and employment for these small establishments were developed from industry averages.

The corresponding estimates for the mail and nonmail establishments were added together, along with the base-year differences, as defined in the Description of Estimating Procedure section, to produce the figures shown in this publication.

DESCRIPTION OF ESTIMATING PROCEDURES

Most of the ASM estimates for the years 1983-1986 were computed using a difference estimation procedure. For each item, a base-year difference was developed. This base-year difference is equal to the difference between the 1982 census published number for an item total and the linear ASM estimate of the total for 1982. The ASM linear estimate was obtained by multiplying each sample establishment's data by its sample weight (the reciprocal of its probability of selection) and summing the weighted values.

These base-year differences were then added to the corresponding current-year linear estimates, which include the sum of the estimates for the mail and nonmail establishments, to produce the estimates for the years 1983-1986. Estimates developed by this procedure usually are far more reliable than comparable linear estimates developed from the current sample data alone.

The 1987 sample estimates for the purchased service items, shown in table 3c, are strictly ASM linear estimates, however, developed only from ASM establishments that reported the specific item.

The remaining estimates in table 3c, showing the break-down of expenditures for new machinery and equipment and costs of parts (separated into purchases from foreign sources and purchases from domestic sources), were computed as ratio estimates. To do this, linear estimates of the new machinery detail items were developed from the ASM establishments and were ratio adjusted to the corresponding census total for new machinery. In a similar fashion, the ASM linear estimates of the detailed purchased materials items were ratio adjusted to the corresponding census total for cost of parts.

QUALIFICATIONS OF THE DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sampled lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the differences between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of the estimates.

The particular sample selected for the ASM is one of a large number of similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretical, comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected statistics in this report. They are presented in the form of relative standard errors (the standard errors divided by the estimated values to which they refer).

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, completecoverage value for specified percentages of all the possible samples).

The complete coverage value would be included in the range:

- 1. From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.
- 2. From two standard errors below to two standard errors above the derived estimate for about 19 of 20 of all possible samples.
- From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown as 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total, about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total and almost certain confidence that the interval 47,000 to 53,000 includes the complete coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors also would occur if a complete canvass were to be conducted under the same conditions as the survey. Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected in the course of the Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or only moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown.

The concept of complete coverage under the conditions prevailing for the ASM is not identical to the complete coverage of the census of manufactures, as the censuses have been conducted. Nearly all types of operational errors that affect the ASM also occur in the censuses. The ASM and the censuses, are conducted under quite different conditions, and operational errors can be better controlled in the ASM than in the censuses. As a result, for many of the census figures, the errors are of the same order of size as the total errors of the corresponding annual survey estimates. The differences between the census and ASM operating conditions also disturb, to some degree, the comparability of the ASM and census data.

Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be of limited reliability. However, the figure may be combined with higher-level totals, creating a broader aggregate, which then may be of acceptable reliability.

APPENDIX C. Changes in Census of Manufactures Product Classes for 1987

[Based on revisions to the Standard Industrial Classification (SIC) Manual definitions of some product classes were revised for 1987. Listed below are the revisions to the product classes]

1987	1982	1987	1982	1987	1982	1987	1982
2011B	2011A 2013A pt	20866 — Con.	20861 pt—Con. 20995 pt	2221F—Con.	22211 pt—Con. 22212 pt 22213 pt	23259 — Con.	23279—Con. 23289 pt
20135	20130	20910	20324 pt 20910		22214 pt 22215 pt	23260	23280
013B	2013A pt	20925	20924		22216 pt 22217 pt	23261	23281
0150	20160 20170	20926		2221G	22211 pt	23262	23284
0151	20161	20961 20962	20992		22212 pt 22213 pt 22214 pt	23269	23289 pt
20152	20171	20963	20981 pt	_	22215 pt 22216 pt 22217 pt	23293	23271 pt 23292
0153	20172	20997	20341 pt 20440 pt	2221H	22211 pt 22212 pt	23530	23510 pt 23520
	20173		20982 2099A pt		22212 pt 22213 pt 22214 pt	23531	23521
0154	20164 20174	20999	2099B pt		22215 pt 22216 pt	23532	23522
0155	20165	2099D	20995 pt		22217 pt	23533	23510 pt
	20175	2099E	2099C	2221J	22218	23692	23631
0159	20179	2099F 2099G	20981 pt	2221K	22219	23693	23691
)226	20220	2211B	22111 pt	2221M	2221A	23699	23619 23699
0239	20239 2099A pt		22112 pt 22113 pt 22114 pt	22510	22510 pt	23813	23811 pt
267	20266 pt 2099B pt		22115 pt 22116 pt	22514	22512 pt	25010	23812 pt
0268	20266 pt	2211C	22111 pt 22112 pt	22518	22517 pt 22510 pt	23814	23811 pt 23812 pt
2004	2099B pt	-	22113 pt 22114 pt		22520	23952	23951 pt
0324	20324 pt		22115 pt 22116 pt	22525	22512 pt 22523	23958	23959
0343	20341 pt	2211D	22111 pt 22112 pt	22526	22517 pt 22524	23964	23951 pt
0384	20380 pt 20381 pt		22112 pt 22113 pt 22114 pt	22585	22920 pt	24930	24920 pt 26610
	20383 pt		22115 pt 22116 pt	22589	22589	24931	24920 pt
0415	20383 pt 20415	2211E	22111 pt 22112 pt	22369	22920 pt	24932	24920 pt
0440	20440 pt		22113 pt 22114 pt	22730	22710 pt 22720 pt	24933	24993
0450	20383 pt		22115 pt 22116 pt		22790 pt	24934	24996
	20450	2211F	22117	22731	22710 pt	24935	26611
0470	20470 pt	2211G	22119	22732	22720 pt	24936	24998
0480	20470 pt 20480	2211H	2211A	22733	22790 pt	24937	24995
048A	20475 20476	2221B	22211 pt 22212 pt	22815	22833	24994	2499A pt
0530	20380 pt 20381 pt		22212 pt 22213 pt 22214 pt 22215 pt 22216 pt	22822	22822 22830	25115	25115 25158
0640	20650 pt		22216 pt 22217 pt	22991	22910	25145	25141
0642	20652	2221C	22211 pt	22994	22940	25146	25142
0643	20653		22212 pt 22213 pt 22214 pt	22995	22930	25146	25143
0649	20659		22215 pt 22216 pt	22996	22992 22993	25147	25144
0660	20660	2221D	22217 pt 22211 pt	23219	23219 pt	25425 25991 25992	25990
0669	20990 pt 20668		22212 pt 22213 pt 22214 pt 22215 pt	23221	23220	25994 2621B	26612
	20998		22214 pt 22215 pt	23222	23215	2621B	26612 26540
0680	20341 pt 20650 pt		22216 pt 22217 pt	23229	23219 pt	26560 26561	26541
	20657	2221E	22211 pt 22212 pt	23250	23229	26562	26542
)863)864	20861 pt		22212 pt 22213 pt 22214 pt	23250		26563	26545
0865			22215 pt 22216 pt	-	23271 pt		
0866	20861 pt 20862	2221F	22217 pt 22211 pt	23252	23283	26570	26510 26544

[Based on revisions to the Standard Industrial Classification (SIC) Manual definitions of some product classes were revised for 1987. Listed below are the revisions to the product classes]

1987	1982	1987	1982	1987	1982	1987	1982
26710	26410 pt	26753	26455	27591	27511 pt	28350—Con. 28351	2831A—Con.
26711	26415	26760	26470	27592	27512 pt	28352	
26712	26416	26761	26471	27593	27513 pt	28360	28310
26713	26419	26763	26473	27594	27514 pt	28361	28311
26714	2641A	26764	26474	27595	27515 pt	28362	28312
		26770	26420	27596	27516 pt	28363	28317
26720 	26410 pt 26411	26780	26480	27597	27511 pt 27512 pt 27513 pt	28364	28318 28319
		26781	26481		27514 pt 27515 pt	28656	2911C
26722	26413	26782	26482		27516 pt	28691	2911B
26723	26414	26790	26460 pt	27598	27519	28916	28915
26724	2641B		26490	27599	27531	28917	20313
26730	26430 pt	26791	26493	2759A	27510 pt	2911D	2911D pt
26731	26435	26792	26494	27960	27530	29990	2911D pt
26732	26436	26793	26496		27950		29990
26733	26437	26794	26460 pt	27961	27951 35557 pt	31430	31430 31433 31434
26740	26430 pt	26795	26497	27962	27952		31435
26741	26434	27416 27417	27411	27963	27532 27547	31440	31440 31445
26742	26438	27418	27412		27547 27930 27940		31446 31447 31448
26750	26450	27419	27414	28247	28243 28245	31490	31490
26751	26453	2741A 2741B	27415	28248	28246		31491 31493 31495
26752	26454	27590	27510 pt	28350	2831A		31495 31496 31497

APPENDIX D. Changes in Census of Manufactures Product Codes for 1987

report forms to	7 1007]										
1987 published	1987 collected	1982 published	1987 published	1987 collected	1982 published	1987 published	1987 collected	1982 published	1987 published	1987 collected	1982 published
20119 14	20119 14	20119 12 20119 13	20159 17	20179 17	20179 17	20343 21	20341 21	20341 21	20488 21	20488 21	20488 18
20110 15	2011B 15	2011A 15	20159 51	20179 51	20179 51	20343 23	20341 23	20341 23	20488 23	20488 23	20488 17 pt
2011B 15 2011B 41	2011B 13	2011A 13	20159 53	20179 53	20179 53	20343 29	20341 29	20341 29	20488 25	20488 25	20488 19 pt
2011B 55	2011B 55	2011A 55	20159 55	20179 55	20179 55	20343 31	20341 31	20341 32 20341 33	20488 31	20488 31	20488 17 pt
2011B 99	2011B 99	2011A 31	20159 57	20179 57	20179 57			20341 35	20488 33	20488 33	20488 19 pt
		2011A 51	20226 00	20220 11	20220 00	20352 31 20352 34	20352 31 20352 34	20352 33	2048A 01	20475 35	20475 35
20135 13 20135 17	20135 13 20135 17	20130 00	20235 22	20235 22	20235 28 pt	20354 35	20354 35	20354 31	2048A 03	20475 52	20475 52
20151 33	20161 33	20161 33	20235 29	20235 29	20235 21			20354 33 20354 39	2048A 05	20476 61	20476 61
20151 34	20161 34	20161 34			20235 28 pt	20382 26 20382 28	20382 26 20382 28	20382 27	2048A 07	20476 63	20476 63
20151 36	20161 36	20161 36	20239 23	20239 23	20239 29 pt	20384 51	20383 51	20383 51	2048A 09	20476 65	20476 65
20151 39	20161 39 20171 39	20161 39 20171 39	20239 25	2099A 12	2099A 11 pt	20384 59	20383 59	20383 59	2048A 11	20476 67	20476 67
20151 41	20161 41	20161 41	20239 28	20239 28	20239 29 pt	20384 63	20383 63	20381 18	2048A 13	20476 69	20476 69
20151 41	20171 41	20171 41	20239 32 20239 38	20239 32 20239 38	20239 31 20239 37	20384 69	20383 69	20383 61 pt	20512 39 20512 40	20512 39 20512 40	20512 38
20152 21	20162 21 20172 21	20162 21 20172 21			20239 39	20411 26	20411 26	20411 24	20512 42	20512 42	00004.44
20152 23	20162 23	20162 23	20240 31	20240 31	20240 98 pt			20411 25	20530 11	20381 11	20381 11
	20172 23	20172 23	20240 52 20240 54	20240 52 20240 54	20240 51	20412 19	20412 19	20412 00 20412 17	20530 13	20381 14	20381 14
20153 22	20163 22 20173 22	20163 21 pt 20173 21 pt	20240 99	20240 99	20240 98 pt	20415 91 20415 93	20383 65 20383 66	20383 61	20530 17	20381 17	20381 17
20153 24	20163 24 20173 24	20163 23 pt 20173 23 pt	20267 11	2099B 11	2099B 11	20430 21	20430 21	20430 19	20530 19	20381 19	20381 19
20153 26	20163 26	20163 25 pt	20267 13	2099B 13	2099B 13	20430 23	20430 23		20642 00	20652 00	20652 00
	20173 26	20173 25 pt	20267 14 20267 16	2099B 14 2099B 16	2099B 19 pt	20430 55	20430 55	20430 52 pt	20643 00	20653 00	20653 00
20153 27	20163 27	20163 21 pt 20163 23 pt	20267 17	20267 17	20266 17	20430 57	20430 57	20430 53 pt	20649 21	20659 21	20659 21
	20173 27	20163 25 pt 20173 21 pt 20173 23 pt	20267 18	2099B 18	2099B 19 pt	20430 61	20430 61	20430 59 pt	20649 76	20659 76	20659 76
		20173 25 pt	20268 13	2099B 51	2099B 51	20430 63	20430 63	20430 52 pt 20430 53 pt	20669 11	20668 11	20668 11
20154 14	20164 14 20174 14	20164 14 20174 14	20268 15	20268 15	20266 15	20450.04	20292.67	20430 59 pt		20998 11	20998 11
20154 16	20164 16	20164 16	20268 19	20268 19	20266 19	20450 91 20450 93	20383 67 20383 68	20383 61	20669 21	20668 21 20998 21	20668 21 20998 21
00455.44	20174 16	20174 16	20324 97	20324 97	20324 98	20464 72 20464 75	20464 72 20464 70	20464 69	20669 63	20668 63 20998 63	20668 63 20998 63
20155 11	20165 11 20175 11	20165 11 20175 11	20324 99	20324 99		20481 21	20481 21	20481 13 pt	20669 71	20668 71	20669 71
20155 13	20165 13 20175 13	20165 13 20175 13	20331, 13	20331 13	20331 71	20481 22	20481 22	20481 17 pt		20998 71	20998 71
20155 15	20165 15	20165 15	20331 32	20331 32	20331 72	20481 23	20481 23	20481 26 pt	20669 75	20668 75 20998 75	20668 75 20998 75
	20175 15	20175 15	20331 36	20331 36	20331 73	20481 24	20481 24	20481 28 pt	20669 81	20668 81	20668 81
20155 31	20165 31 20175 31	20165 31 20175 31	20331 38	20331 38	20331 74	20481 31	20481 31	20481 13 pt	20669 92	20668 92	20668 92
20155 32	20165 32 20175 32	20165 32 20175 32	20331 41	20331 41	20331 75	20481 32	20481 32	20481 17 pt	20660 02	20998 92	20998 92
20155 33	201/5 32	201/5 32	20332 05	20332 05	20332 08 20332 09 20332 92	20481 33	20481 33	20481 26 pt	20669 93	20668 93 20998 93	20668 93 20998 93
20100 00	20105 33	20175 33	20332 37	20332 37	20332 96	20481 34	20481 34	20481 28 pt	20669 95	20668 95 20998 95	20668 95 20998 95
20155 34	20165 34 20175 34	20165 34 20175 34	20336 14	20336 14	20336 13	20483 01 20483 02	20483 01 20483 02	20483 00	20670 11	20670 11	20670 12
20155 39	20165 39	20165 39	20336 15	20336 15	20336 19	20485 03	20485 03	20485 00	20670 14	20670 14	
00455.10	20175 39	20175 39	20336 31	20336 31		20485 04	20485 04	20.00	20680 13	20657 13	20657 13
20155 48	20165 48 20175 48	20165 48 20175 48	2033B 21	2033B 21	2033B 00	20487 05 20487 06	20487 05 20487 06	20487 00	20680 15	20657 15	20657 15
20159 11	20179 11	20179 11	20343 13	20341 13	20341 15	20488 11	20488 11	20488 14	20680 17	20657 17	20657 17
20159 13	20179 13	20179 13	20343 15	20341 15	20341 15	20488 12	20488 12	20488 15	20680 33	20657 33	20657 33
20159 15	20179 15	20179 15	20343 18	20341 18	20341 18	20488 13	20488 13		20680 35	20657 35	20657 35

report forms to	1907]										
1987 published	1987 collected	1982 published	1987 published	1987 collected	1982 published	1987 published	1987 collected	1982 published	1987 published	1987 collected	1982 published
20680 37	20657 37	20657 37	20863 20— Con.	20863 20— Con.	20863 01— Con.	20922 27 20922 28	20922 27 20922 28	20922 29	2099E 33	2099E 33	2099C 33
20680 53	20657 53	20657 53			20863 36 20863 37	20922 31	20922 31		2099E 38	2099E 38	2099C 38
0680 55	20657 55	20657 55			20863 38 20863 39 20863 42	20923 11 20923 13	20923 11 20923 13	20923 21	2099E 39	2099E 39	2099C 39
0680 57	20657 57	20657 57	_		20863 44 20863 45	20923 15	20923 15	20923 22	2099F 44	2099F 44	2099C 44
0680 61	20657 61	20657 61			20863 47	20923 17	20923 17	20323 22	2099F 46	2099F 46	2099C 46
0740 98	20740 98	20740 00	20863 30	20863 30	20861 01 pt 20861 03 pt	20923 19	20923 19	20923 23	2099G 11	2099G 11	2099C 11
0750 98	20750 98	20750 00			20861 07 pt 20861 10 pt 20861 11 pt	20923 31 20923 33	20923 31 20923 33	20923 26	2099G 25	2099G 25	2099C 25
0760 94 0760 95	20760 94 20760 95	20760 00			20861 12 pt 20861 13 pt	20923 35	20923 35	20923 28	2099G 51	2099G 51	2099C 51
0760 96 0760 97	20760 96 20760 97				20861 14 pt 20861 15 pt	20323 33	20923 33	20923 29	2099G 85	2099G 85	2099C 85
0760 98	20760 98		-		20861 16 pt 20861 17 pt	20925 21	20925 21	20924 21	2099G 91	2099G 91	2099C 91
0821 01	20821 01	20821 14 20821 19 pt			20861 18 pt 20861 19 pt	20925 22	20925 22	20924 22	2099G 98	2099G 98	2099C 98
0821 02	20821 02	20821 15 20821 19 pt			20861 20 pt 20861 21 pt	20925 23	20925 23	20924 33 pt	2211B 00	2211B 00	22111 00 22112 00
2021 02	20021 02		-		20861 22 pt 20861 23 pt 20861 24 pt	20925 24	20925 24	20924 24			22112 00 22113 00 22114 10
0821 03	20821 03	20821 18 20821 19 pt			20861 26 pt 20861 27 pt	20925 25	20925 25	20924 25			22114 50 22115 00
0824 99	20824 99	20824 71 20824 81			20861 28 pt 20861 29 pt	20925 26	20925 26	20924 26			22116 00
		20824 91	_		20861 31 pt 20861 32 pt	20925 31	20925 31	20924 31	2211C 00	2211C 00	22111 00 22112 00
0840 45 0840 46	20840 45 20840 46	20840 43			20861 33 pt 20861 34 pt	20925 32	20925 32	20924 32			22113 00 22114 10 22114 30
0851 48	20851 48	20851 41			20861 36 pt 20861 37 pt 20861 38 pt	20925 33	20925 33	20924 33 pt	_		22114 50 22115 00
		20851 45 20851 49			20861 39 pt 20861 42 pt	20925 34	20925 34	20924 34			22116 00
20863 10 2	20863 10	20861 01 pt			20861 44 pt 20861 45 pt	20925 35	20925 35	20924 35	2211D 00	2211D 00	22112 00
		20861 03 pt 20861 07 pt 20861 10 pt			20861 47 pt	20925 36	20925 36	20924 36			22114 10
		20861 11 pt 20861 12 pt 20861 13 pt 20861 14 pt	20864 10	20864 10	20861 51 20861 52 20861 53 20861 55	20926 11 20926 13 20926 98	20926 11 20926 13 20926 98	20924 98		22112 00 22113 00 22114 10 22114 30 22115 00 22115 00 22116 00 22112 00 22113 00 22114 00 22114 00 22114 00	
		20861 15 pt 20861 16 pt 20861 17 pt			20861 56 20861 57 20861 58 20861 59	20951 15	20951 15	20915 18 20951 17	2211E 00	2211E 00	22112 00 22113 00
		20861 18 pt 20861 19 pt	20865 01	20865 01	20861 81 pt	20961 00	20992 13	20992 12	1		
		20861 20 pt 20861 21 pt 20861 22 pt	20865 02	20065-02	20861 83 pt	20980 21	20981 21	20981 21			22114 50 22116 00
		20861 23 pt 20861 24 pt	20865 02	20865 02	20861 81 pt 20861 83 pt	20980 31	20981 31	20981 31	2211F 00	2211F 00	22117 00
		20861 25 20861 26 pt	20866 01	20866 01	20862 88 pt 20862 89 pt	20997 13	2099A 13	2099A 11 pt			22117 1 22117 3
		20861 27 pt 20861 28 pt	20866 02	20866 02	20862 85	20997 21	2099A 21	2099A 21			22117 5 22117 6
		20861 29 pt 20861 31 pt	20000 02	20000 02	20862 86 20862 88 pt	20997 31	2099A 31	2099A 31	2211G 10 2211G 30	2211G 10 2211G 30	22119 0
		20861 32 pt 20861 33 pt			20862 89 pt	20997 41	2099A 41	2099A 41	2211H 37	2211H 37	2211A 3
		20861 34 pt 20861 36 pt 20861 37 pt	20866 03	20866 03	20862 91	20997 61	20341 36	20341 36	2211H 42	2211H 42	2211A 4
		20861 38 pt	20866 04 20866 05	20866 04 20866 05	20861 93	20997 71	20440 19	20440 19	2211H 43	2211H 43	2211H 4
		20861 39 pt 20861 42 pt	20866 06	20866 06	20861 83 pt	20997 81	20982 35	20982 35	2211H 44	2211H 43	22111 4 2211A 4
		20861 44 pt 20861 45 pt 20861 47 pt	20866 07	20995 85	20995 85	20997 85	20982 41	20982 41	2211H 46	2211H 46	2211A 4
0863 20	20863 20	20863 01	20866 09	20866 09	20860 00	20997 98	2099A 98	2099A 98	2211H 62	2211H 62	2211A 6
3003 20	20003 20	20863 03 20863 07	20873 21	20873 21	20873 13 pt	20999 21	2099B 21	2099B 21	2211H 65	2211H 65	2211A 6
		20863 10 20863 12			20873 39 pt	20999 31	2099B 31	2099B 31	2211H 67	2211H 67	2211A 6
		20863 13 20863 14	20873 23	20873 23	20873 13 pt 20873 39 pt	20999 35	2099B 35	2099B 98 pt			
		20863 15 20863 16 20863 17	20873 25	20873 25	20873 13 pt 20873 39 pt	20999 41	2099B 41 2099B 53	2099B 41 2099B 98	2211H 69 2211H 73 2211H 75	2211H 69 2211H 73 2211H 75	2211A 6
		20863 18 20863 19 20863 20 20863 21	20873 41	20873 41	20873 13 pt 20873 39 pt	20999 55 20999 98	2099B 55 2099B 99		2221B 00	2221B 00	22211 00 22212 00
		20863 22 20863 23	20873 43	20873 43	20873 13 pt 20873 39 pt	2099D 82	20995 82	20995 82	-		22213 00 22214 00
		20863 24 20863 26	20873 45	20873 45	20873 13 pt	2099D 83	20995 83	20995 83	_		22215 00 22216 00 22217 10
		20863 27 20863 28 20863 29			20873 39 pt	2099D 86	20995 86	20995 86			22217 30
		20863 29 20863 31 20863 32	20910 19	20324 11 20910 19	20324 98 pt 20910 19	2099E 31	2099E 31	2099C 31	2221C 00	2221C 00	22214 00 22215 00

report forms for											
1987 published	1987 collected	1982 published	1987 published	1987 collected	1982 published	1987 published	1987 collected	1982 published	1987 published	1987 collected	1982 published
2221C 00- Con.	2221C 00 Con.	22214 00 pt —Con.	22514 37	22512 37	22512 37	22840 51	22840 51	22840 15 pt 22840 28 pt	23531 01	23521 15	23521 15
oon.	0011.	22217 10 pt 22217 30 pt	22514 39	22512 39	22512 36 22512 38	22840 61	22840 61	22840 35	23531 03	23521 41	23521 41
2221D 00	2221D 00	22211 00 pt	22514 45	22512 45	22512 45	22950 00	22950 00	22950 00	23531 05	23521 83	23521 83
		22212 00 pt 22213 00 pt 22214 00 pt	22518 14	22517 14	22517 15 pt	22950 98	22950 98		23531 09	23521 91	23521 91
		22215 00 pt 22216 00 pt	22518 17	22517 17	22517 17	22991 00	22910 00 pt	22910 00 pt	23532 01	23522 12	published 23521 15 23521 41 23521 83 23521 91 23522 12 23522 15 23522 17 23522 98 23510 12 23510 41 23510 93 23611 30 pt 23612 00 23611 30 pt 23612 00 23691 40 23691 70 23691 92 23811 00 pt 23812 00 pt 23812 00 pt 23812 00 pt 23812 00 pt 23910 11 pt 23910 17 pt 23910 18 pt 23910 17 pt 23910 17 pt 23910 18 pt 23910 17 pt 23910 17 pt 23910 18 pt 23910 17 23910 18 pt 23910 17 23910 18 pt 23910 57 pt 23910 57 pt 23910 58 pt 23910 57 pt 23910 57 pt 23910 58 pt 23910 17 pt 23910 57 pt 23910 57 pt 23910 58 pt 23911 17 pt 23921 12 pt 23921 15 pt 23921 15 pt 23921 17 pt
		22217 10 pt 22217 30 pt	22525 11	22523 11	22523 11	22991 12 22991 13	22910 12 22910 13	22910 11	23532 03	23522 15	23522 15
2221E 00	2221E 00	22211 00 pt	22525 15	22512 11	22512 11	22991 15 22991 17	22910 15 22910 17	22910 19	23532 05	23522 17	23522 17
		22212 00 pt 22213 00 pt 22214 00 pt	22525 17	22523 17	22523 17	22991 21	22910 21	22910 00	23532 09	23522 98	23522 98
		22215 00 pt 22216 00 pt	22525 21	22523 21	22523 21	22991 23	22910 23		23533 01	23510 12	23510 12
		22217 10 pt 22217 30 pt	22525 27	22523 27	22523 27	22991 35	22910 35	22910 36 22910 38	23533 03	23510 41	23510 41
2221F 00	2221F 00	22211 00 pt 22212 00 pt	22525 31	22523 31	22523 31	22991 47	22910 47	22910 47	23533 09	23510 93	23510 93
		22213 00 pt 22214 00 pt	22525 51	22523 51	22523 51	22994 22	22940 22	22940 14 pt	23613 00	23613 00	
		22215 00 pt 22216 00 pt	22525 57	22523 57	22523 57	20004.04	20010.01	22940 21 pt	23614 00	23614 00	23611 30 pt
		22217 10 pt 22217 30 pt	22525 61	22523 61	22523 61	22994 31	22940 31	22940 14 pt 22940 21 pt	23615 00	23615 00	23611 10
2221H 10	2221H 10	22211 00 pt 22212 00 pt	22525 81	22523 81	22523 81	22994 35	22940 35	22940 14 pt 22940 21 pt	23692 00	23631 00	23631 00
		22213 00 pt 22214 00 pt	22526 25	22524 25	22524 25	22994 39	22940 39	22940 14 pt	23693 40	23691 40	23691 40
		22215 00 pt 22216 00 pt 22217 10 pt	22526 42	22517 13 22524 41	22517 15 pt 22524 41			22940 28	23693 70	23693 70	23691 70
		22217 30 pt	22526 51	22524 51	22524 51	22994 41	22940 41	22940 41	23693 80 23693 93	23691 80 23691 93	23691 92
2221H 20	2221H 20	22211 00 pt 22212 00 pt	22585 00	22920 00	22920 00	22995 17	22930 17	22930 17	23813 00		23811 00 pt
		22213 00 pt 22214 00 pt	22617 00	22617 00	22617 11	22995 19	22930 19	22930 19	20010	23813 00	
		22215 00 pt 22216 00 pt 22217 10 pt			22617 31 22617 51 22617 61	22995 32	22930 32	22930 32	23814 00	23814 00	
2001 00	···	22217 30 pt	22619 00	22619 00	22619 11	22995 33 22995 35	22930 33 22930 35	22930 34	23910 10	23910 10	
2221J 00	2221J 00	22218 00 22218 15	22019 00	22013 00	22619 31 22619 51	22995 57	22930 57	22930 57			23910 18 pt
		22218 25 22218 35 22218 38			22619 71	22996 01	22996 01	22992 61			23910 57 pt
		22218 55 22218 58	22628 00	22628 00	22628 20 22628 30 22628 50	22996 03	22996 03	22992 75	23910 12	23910 12	23910 11 pt
		22218 64 22218 67			22628 61	22996 10	22996 10	22993 40	23910 19	23910 19	23910 17
2221K 00	2221K 00	22219 15 22219 25	22629 00	22629 00	22629 20 22629 30	22996 11	22996 11	22993 50	23910 21	23910 21	22010 10 0
2221M 21	2221M 21	2221A 21			22629 50 22629 61	23213 00	23213 00	23212 00 23214 00 pt	23910 25	23910 25	
		2221A 22	22731 00	22710 00	22710 00	23216 00	23216 00	23214 00 pt	23910 52	23910 52	·
2221M 23	2221M 23	2221M 23 2221M 24	22732 20	22720 20	22720 20	23222 00	23215 00	23215 00	23910 61	23910 61	23910 37
2221M 25	2221M 25	2221A 25	22732 40	22720 40	22720 40	23229 11	23229 93	93000 00	23910 62	23910 62	23910 58 pt
		2221A 26	22733 00	22790 00	22790 00	23229 12	23219 15	23219 15	23921 11	23921 11	23921 12 pt 23921 13 pt
2221M 27	2221M 27	2221A 27 2221A 28	22815 10	22833 10	22831 00	23251 00	23271 11	23271 00	1		23921 15 pt 23921 17 pt
2221M 33	2221M 33	2221A 33 2221A 37	22815 20	22833 20	22833 20	23252 00	23283 00	23283 00			23921 19 pt
2221M 41	2221M 41	2221A 41	22822 21 22822 31	22822 21 22822 31	22822 00	23259 11	23279 13	23279 00 pt			23921 28 pt
		2221A 44	22823 11	22823 11	22823 27 pt	23259 12	23289 11	23289 11	23921 14	23921 14	23921 12 pt
2221M 42	2221M 42	2221A 42 2221A 45			22823 32 pt 22823 35 pt	23261 00	23281 00	23281 00	23921 16	23921 16	
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28361 15	28311 15	28311 15	28511 00— Con.	28511 00— Con.	28511 11— Con. 28511 85 28511 89 28511 93	28750 20	28750 20	28750 11 pt 28750 21 pt	29521 13— Con.	29521 13— Con.	29521 11— Con.
28361 20	283	28311 13 28311 17 28311 19				28750 30	28750 30	28750 31 pt	29521 15	29521 15	
28362 10	28312 10	28312 00	28512 00	28512 00	28512 21 28512 23 28512 25 28512 27 28512 31 28512 33	28750 40	28750 40	28750 11 pt 28750 21 pt	29523 60	29523 60	29523 54 pt 29523 56 pt
28362 20	28312 20		-			28750 50	28750 50	28750 31 pt	29523 62	29523 62	29523 53
28363 10	28313 10	28317 15	-			28750 60	28750 60	28750 11 pt	29523 64	29523 64	29523 54 pt 29523 56 pt
28363 20	28313 20	28317 25			28512 35 28512 37 28512 39	20750 00		28750 21 pt	29523 66	29523 66	29523 54 pt
28364 10 28364 15	28314 10 28314 15	28318 14			28512 41 28512 43 28512 45 28512 47	28750 70	28750 70	28750 31 pt			29523 56 pt
28364 20 28364 25	28314 20 28314 25	28318 16				28797 51	28797 51	28797 31 28797 81	29990 20 29990 30	2911D 20 2911D 30	2911D 92
28364 30	28314 30	28319 00			28512 49 28512 51 28512 53	28798 30 28798 83	28798 30 28798 83	28798 81	29990 93 29990 99	29990 93 29990 99	29990 98
28411 43	28411 43	28411 42 28411 44			28512 55 28512 58 28512 59	28914 57 28914 98	28914 57 28914 98	28914 89	31116 24	31116 24	31116 23 31116 25
28411 62	28411 62	28411 61 28411 63			28512 61 28512 65	28916 10	28916 10	28915 56 pt	31116 37 31116 38	31116 37 31116 38	31116 72 pt
28412 18	28412 18	28412 05	28513 00	28513 00	28513 01 28513 05	28916 20	28916 20	28915 61 pt	31116 43	31116 43	31116 41
		28412 19			28513 07 28513 11	28916 30	28916 30	28915 63 pt			31116 72 pt
28413 97	28413 97	28413 51 28413 61 28413 95			28513 13 28513 16 28513 27	28916 40	28916 40	28915 65 pt	31116 51	31116 51	31116 53 31116 72 pt
28423 53	28423 53	28423 99	1		28513 29 28513 31	28916 50	28916 50	28915 67 pt	31116 57	31116 57	31116 55
28423 95	28423 95	20420 00	28515 00	28515 00	28515 21 28515 22 28515 23 28515 31 28515 32 28515 99	28917 11	28917 11	28915 54	31116 62	04446.60	31116 72 pt
28441 49	28441 49	28441 37 28441 39				28917 21	28917 21	28915 55		31116 62	31116 61 31116 72 pt
28443 25	28443 25	28443 98				28917 31	28917 31	28915 56 pt	31116 63 31116 65	31116 63 31116 65	31116 64 31116 72 pt
28443 27 28443 95	28443 27 28443 95		28611 98			28917 41	28917 41	28915 61 pt	31110 03	31430 00	31430 00
28444 71	28444 71	28444 73 28444 75	20011 00	20011 00	28611 23 28611 99	28917 51 [′]	28917 51	28915 63 pt		01400 00	31434 00 31435 00
28445 02	28445 02	28445 11	28612 31	28612 31	28612 11 28612 21	28917 61	28917 61	28915 65 pt	31440 00	31440 00	31445 00 31446 00
28445 03	28445 03	28445 12	28656 58	2911C 58	2911C 58	28917 71	28917 71	28915 67 pt			31447 00 31448 00
28445 04	28445 04	28445 13	28656 59			28920 39	28920 39	28920 35 28920 37	31490 10	31490 10	31497 23
28445 05	28445 05	28445 14	20050 59	2911C 59	2911C 59	28920 57	28920 57	28920 53	31490 20	31490 20	31491 00
28445 08	28445 08	28445 15	28691 32	2911B 32	2911B 32			28920 55	}		31493 00 31495 00
28445 09	28445 09		28691 33	2911B 33	2911B 33	28995 25 28995 26	28995 25 28995 26	28995 29			31496 00 31497 25
28445 50	28445 50	28445 45 28445 48	28695 25 28695 27	28695 25 28695 27	28695 21	28995 40 28995 42	28995 40 28995 42 28995 45	28995 37	31510 00	31510 00	31510 20 31510 70
28445 59 28445 99	28445 59 28445 99	28445 95	28742 00	28742 00	28742 00 28742 10 28742 71	28995 45 28995 69	28995 69	28995 68	31610 01	31610 01	31610 16 pt 31610 18 pt
28511 00	28511 00	28511 11 28511 21 28511 22	28744 10	28744 10	28744 21 pt 28744 31 pt	28995 70 28995 71	28995 70 28995 71	0005.04			31610 35 pt 31610 37 pt 31610 39 pt
		28511 24 28511 25 28511 35	28511 24 28511 25 28511 35 28511 37	28744 20	28744 11 pt	28995 82 28995 83 28995 84	28995 82 28995 83 28995 84	28995 81	31610 03	31610 03	31610 16 pt 31610 18 pt
		28511 37 28511 38 28511 43			28744 21 pt	28995 88 28995 89	28995 88 28995 89	28995 87			31610 35 pt 31610 37 pt 31610 39 pt
		28511 45	28744 30	28744 30	28744 31 pt	28995 94	28995 94	28995 95	31610 05	31610 05	31610 16 pt
		28511 47 28511 49 28511 53	28744 40	28744 40	28744 11 pt 28744 21 pt	28995 96	28995 96				31610 18 pt 31610 35 pt 31610 37 pt
		203113/	28744 50	28744 50	28744 31 pt	28995 98 28995 99	28995 98 28995 99	28995 97			31610 39 pt
		28511 59 28511 63	20,44 00								
		28511 59 28511 63 28511 65 28511 69 28511 71	28744 60	28744 60	28744 11 pt 28744 21 pt	29118 59	29118 59	29118 54 29118 58	31610 07	31610 07	31610 24 31610 32
		28511 57 28511 59 28511 63 28511 63 28511 69 28511 71 28511 73 28511 75 28511 77			28744 11 pt 28744 21 pt 28744 31 pt	29118 59 2911D 23 2911D 25	29118 59 2911D 23 2911D 25	29118 54 29118 58 2911D 21	31610 07	31610 07 31610 09	31610 24 31610 32 31610 16 pt 31610 18 pt 31610 35 pt

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PUBLICATION PROGRAM

1987 CENSUS OF MANUFACTURES

Publications of the 1987 Census of Manufactures, containing preliminary and final data on manufacturing establishments in the United States, are described below. Publications order forms for the specific reports may be obtained from any Department of Commerce district office or from Data User Services Division, Customer Services (Publications), Bureau of the Census, Washington, DC 20233.

Preliminary Reports

Industry series—83 reports (MC87-I-20A(P) to -39D(P))

Preliminary industry data are issued in 83 separate reports covering 459 industries. Preliminary summary data for the U.S. and States are released in one report.

Final Reports

Industry series-83 reports (MC87-1-20A to -39D)

Each of the 83 reports provides information for a group of related industries ("dairy products" includes industries for butter, cheese, milk, etc.). Final figures for the United States are shown for each of the 459 manufacturing industries on quantity and value of products shipped and materials consumed, cost of fuels and electric energy, capital expenditures, assets, rents, inventories, employment, payroll, payroll supplements, hours worked, value added by manufacture, number of establishments, and number of companies. Comparative statistics for earlier years are provided where available.

For each industry, data on value of shipments, value added buy manufacture, capital expenditures, employment, and payroll are shown by employment-size class of establishment, State, and degree of primary product specialization.

Geographic area series—51 reports (MC87-A-1 to -51)

A separate report is being published for each State and the District of Columbia. Each report presents data for industry groups and industries on value of shipments, cost of materials, value added by manufacture, employment, payroll, hours worked, new capital expenditures, and number of manufacturing establishments for the State, MSA's, counties, and selected places. Comparative statistics for earlier census years are shown for the State and large MSA's. Manufacturing totals are presented for each county and for places with significant manufacturing activity. Detailed statistics (including inventories, assets, rents, and energy costs) are presented only in statewide totals.

Subject series—7 reports (MC87-S-1 to -7)

Each of the seven reports contains detailed statistics for an individual subject, such as concentration ratios in manufacturing, type of organization, water use in manufacturing, textile machinery in place, distribution of sales by class of customer, manufacturers' shipments to the Federal Government, and a general national-level summary.

Reference series—1 report (MC87-R-1)

The Numerical List of Manufactured and Mineral Products includes a description of the principal products and services published in the 1987 Censuses of Manufactures and Mineral Industries.

Location of Manufacturing Plants—1 report (MC87-LM)

This report includes data for number of establishments by four-digit SIC industry and by employment-size class for counties, incorporated places of 2,500 inhabitants or more, and zip codes for each State. (This report is available only on magnetic tape and CD-ROM.)

Analytical Reports—3 reports (AR87-1 to -3)

Exports From Manufacturing Establishments (AR87-1)

This report presents data on exports by two- and three-digit SIC industry groups for the United States and States. Information is presented on value of direct report shipments and estimates of the employment required to manufacture these products. Included are estimates of employment in manufacturing and nonmanufacturing establishments that supply parts, materials, and services for production of manufactured exports.

Selected Characteristics of Manufacturing Establishments That Export (AR87-2)

This report presents data on the number of manufacturing companies and establishments that export by major group, State, employment size, and ratios of exports to shipments.

Indexes of Production (AR87-3)

The indexes presented in this report are designed to measure the change in physical output of each manufacturing and mineral industry between 1982 and 1987.

MICROFICHE

Every final published report in the 1987 Census of Manufactures will be available on microfiche.

PUBLIC-USE COMPUTER TAPES AND COMPACT DISCS

Data from the final industry series, geographic area series, and the Location of Manufacturing Plants report will be available on public-use computer tapes and compact discs-read only memory (CD-ROM). These tapes will provide the same information found in the final reports. Computerized data products are available for users who wish to summarize, rearrange, or process large amounts of data. These products, with corresponding technical documentation, are sold by Data User Services Division, Customer Services (Tapes), Bureau of the Census, Washington, DC 20233.

OTHER ECONOMIC CENSUSES REPORTS

Data on retail trade, wholesale trade, service industries, construction industries, mineral industries, transportation, enterprise statistics, minority-owned businesses, and women-owned businesses also are available from the 1987 Economic Censuses. A separate series of reports covers the censuses of outlying areas—Puerto Rico, Virgin Islands of the United States, Guam, and the Northern Mariana Islands. Separate announcements describing these reports are available free of charge from Data User Services Division, Customer Services (Publications), Bureau of the Census, Washington, DC 20233.









